



Classic Freestanding Roofing guide for Sunroom

Ranges NOVATOIT

Foam

Acoustic Foam

Acoustic Foam +

Tricouche

Phonic Quad-Layer

Foam Silence

Phonic Silence Tri-Layer

Edition June 2020

ITEM	Product	SUNROOM ROOF PANEL INSTALLATION GUIDE	
	DESIGNATION	Sunroom Roof Panels	
	CRF / DEF :	GDP 2020-05	

SANDWICH PANELS INSTALLATION GUIDE FOR SUNROOM ROOFS

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General rules for handling panels

- Open pallets (without protective cover) should not be stored outdoors;
- Wrapped pallets stored outdoors must be placed on an inclined plane to prevent water retention on top;
- When stacking from one pallet to the other, ensure the correct alignment of the pallets for good load distribution;
- Do not stack more than 2 pallets on top of each other;
- Do not step on the signs;
- Always handle the panels with 2 people, with care avoiding shocks;
- Never slide the panels on top of each other, but lift them by lifting the ends directly;
- Never transport panels directly on the forks of a forklift;
- When preparing an order, ensure:
 - Position a protection on the pallet, cardboard and a foam film;
 - Deburr any cutting lines on the saw;
 - Check the absence of particles between panels;
 - Strap the batch of panels without tightening too much with plastic ties resting on angles, so as not to crush the panels;

General rules for the installation of panels

- Always handle the panels with 2 people, with care avoiding shocks;
- Do not leave the panels with the protective films outside for more than 45 days;
- Do not use blunt objects or indelible felt for tracing operations;
- Use suitable cutting tools of the alternating toothed circular saw type for aluminum, but no jigsaw or disc cutter;
- Do not slide the panels on top of each other or on the structures to avoid scratches, but lift them by taking them by the ends;
- Do not walk directly on the panels without having put on a polystyrene plate type protection;
- Do not jump on the panels;
- Do not clean the panels with solvents;
- Limit the tightening torque of the fasteners so as not to deform the panels.

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General rules for design and bimetal effect

- Always place the panels in the direction of the slope;
- Design the roof taking into account the expansion and the bimetal effect, appropriate configuration and adequate sizing of panels;
- Comply with snow and wind regulations for the sizing of the structure and the span of the panels;
- All the materials or products located in contact with or in the environment of the panels must be compatible with each other so as not to risk causing (with or without external agents) a corrosion or particular aging reaction (see professional rules of the sunroom 2011 page 44 §4).

The bimetal effect:

- The expansion applies to all materials, it results from an increase in temperature which generates an elongation of the material.

On the sandwich panels, the facings are made of aluminum but separated by different thicknesses of insulating materials, which causes a significant temperature difference between the face located to the climatic hazards on the exterior side and that located on the interior side. This temperature delta will result in a deformation of the panel. This arrow will sometimes be positive, depending on whether the temperature will be higher on the outside of the roof compared to the inside (hot period), or conversely negative, when the temperature will be higher inside the sunroom compared to the interior (cold period).

This phenomenon is not fixed, the posture of the panel will change according to temperature variations.

This can generate cracking noises in the phases of temperature change.

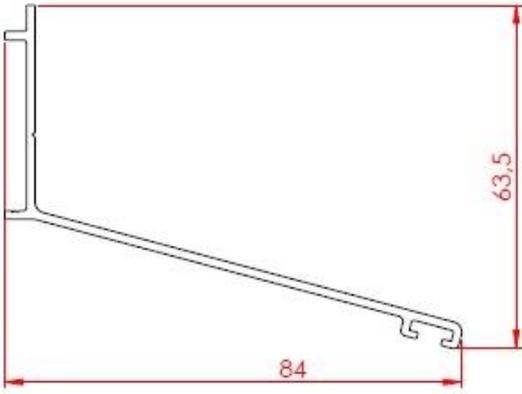
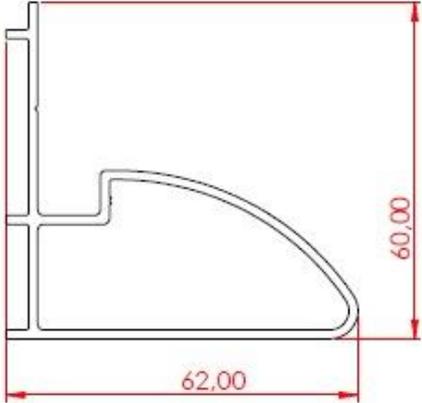
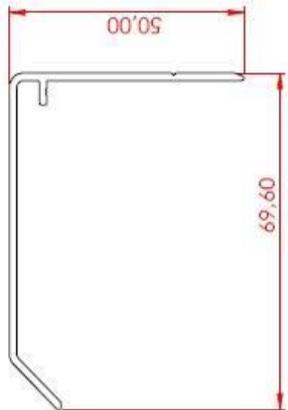
It is important to anticipate and integrate this phenomenon into the design and implementation of panels, by integrating expansion games (see implementation part).

- The load-bearing profiles with joints or glazing beads must not clamp the panels and must allow a slight displacement of the panel;
- The profiles must have joints to avoid metal-to-metal friction;
- For self-supporting panels, fixing the panels only in the upper and lower part;
- No structural element should limit or interfere with the natural movement of the panels, especially in the running part (gables).

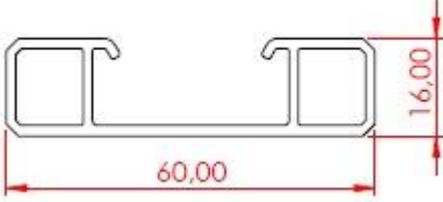
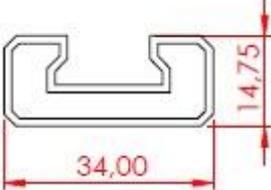
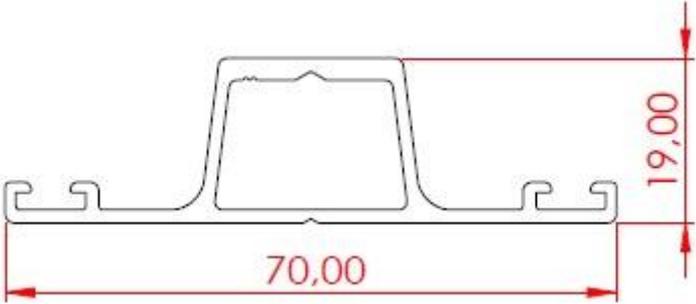
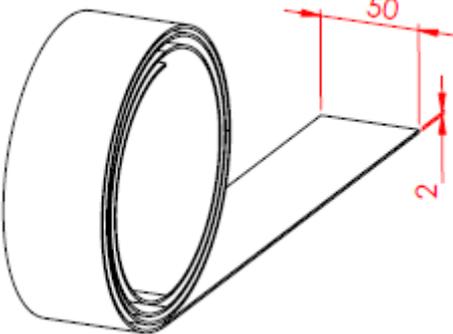
If the panel is fixed in the middle, in case of positive arrow grip, it can lift the structure, conversely, in case of negative boom grip, if there is no play between the internal face of the panel and the structural elements, these are the ends of the panel which will rise, which may cause the fixing points to be torn off or the panel to be punched by the screw heads.

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ACCESSOIRES :

	<p>Réf. 004 - White Superior Wall Hook. Ral 9010. Length 275.5 in. Réf. 825 - Brown Superior Wall Hook. Ral 8004. Length 275.5 in. Réf. 006 - Roussillon Superior Wall Hook. Length 275.5 in. Réf. 826 - Grey Superior Wall Hook Ral 7024. Length 275.5 in.</p>
	<p>Réf. 003 - White Inferior Wall Hook Ral 9010. Length 275.5 in.</p>
	<p>Réf. 093 - White Rim 2.36 in Ral 9010. Length 275.5 in. Réf. 099 - Roussillon Rim 2.36 in Length 275.5 in. Rf. 828 - Brown Rive 2.36 in Ral 8004. Length 275.5 in. Réf. 827 - Grey Rim 2.36 in. Ral 7024. Length 275.5 in.</p>

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	<p>Réf. 136 - Aluminum junction Key 16x60. Length 295,27in.</p> <p>- Aluminum junction Key 16x60. Length 177,16 in.</p>
	<p>Réf. 035 - PVC junction Key. Length 295,27in.</p>
	<p>Réf. 002 - White Clamp profile Ral 9010. Length 275.5 in.</p> <p>Réf. 115 - Roussillon Clamp profile. Length 275.5 in.</p> <p>Réf. 0891 - Grey Clamp Profile Ral 7024. Length 275.5 in.</p>
	<p>Réf. 095 - Rubber seal for upper wall hanging . Length 5.9 in.</p>
	<p>Réf. 1028 - White Self-adhesive sealing tape 50 x 2 RAL 9016. Length 33 ml.</p> <p>Réf. 1029 - Brown Self-adhesive sealing tape 50 x 2 Brun RAL 8004. Length 33 ml.</p> <p>Réf. 1030 - Slate Self-adhesive sealing tape 50 x 2 RAL 7016. Length 33 ml.</p>

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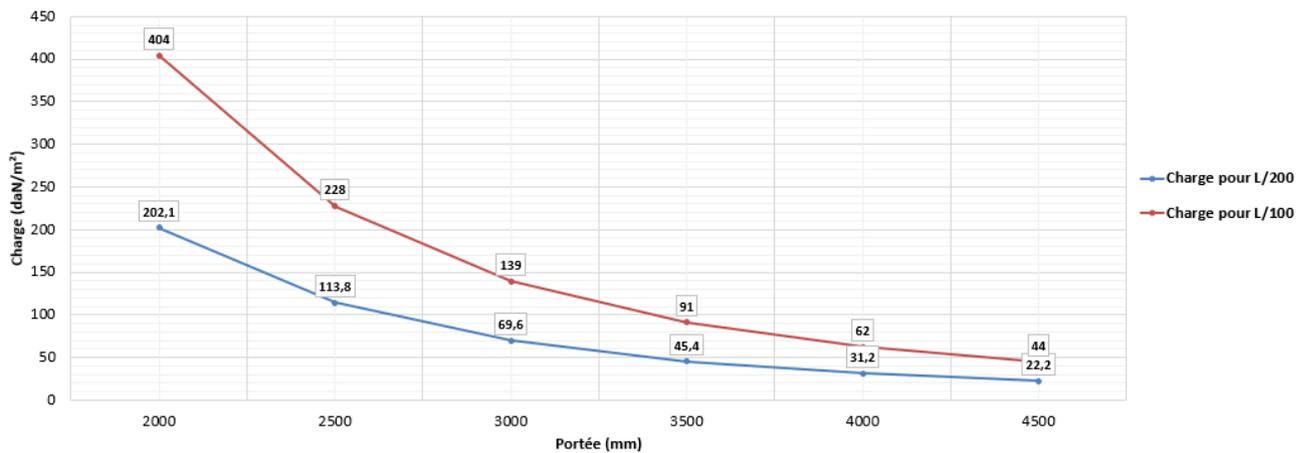
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1. Load charts

According to the snow and wind rules in force in the installation area, refer to the charts below to define the maximum range of the panels. Data only valid for an altitude below 900 meters.

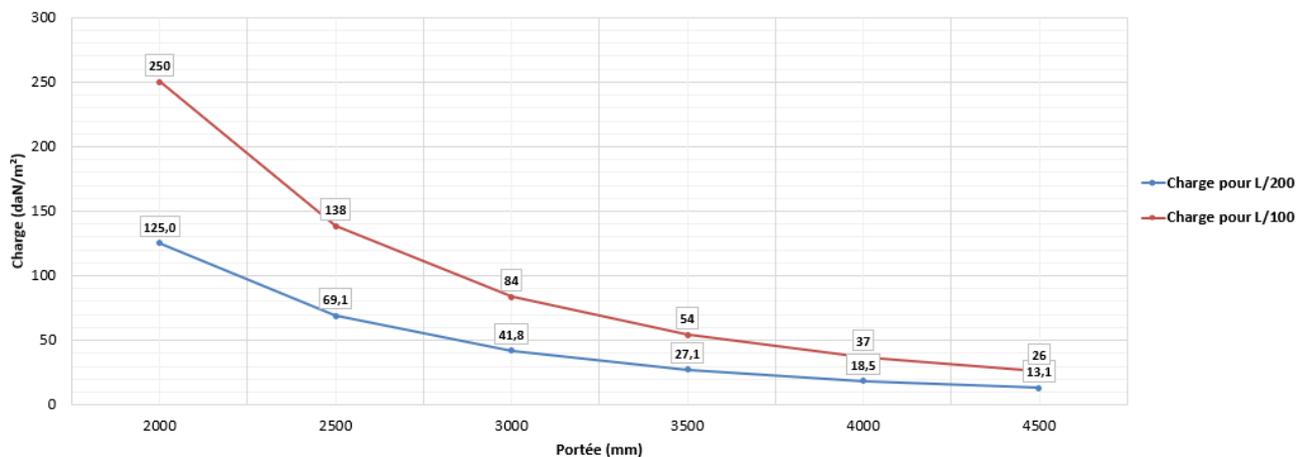
Foam Panel 52 / Acoustic Foam 55 / Acoustic Foam + 55 / Foam Silence 55

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



Phonic Tri-layer 58 Panels/ Phonic Quadri-layer 61 / Phonic Tri-layer Silence 61

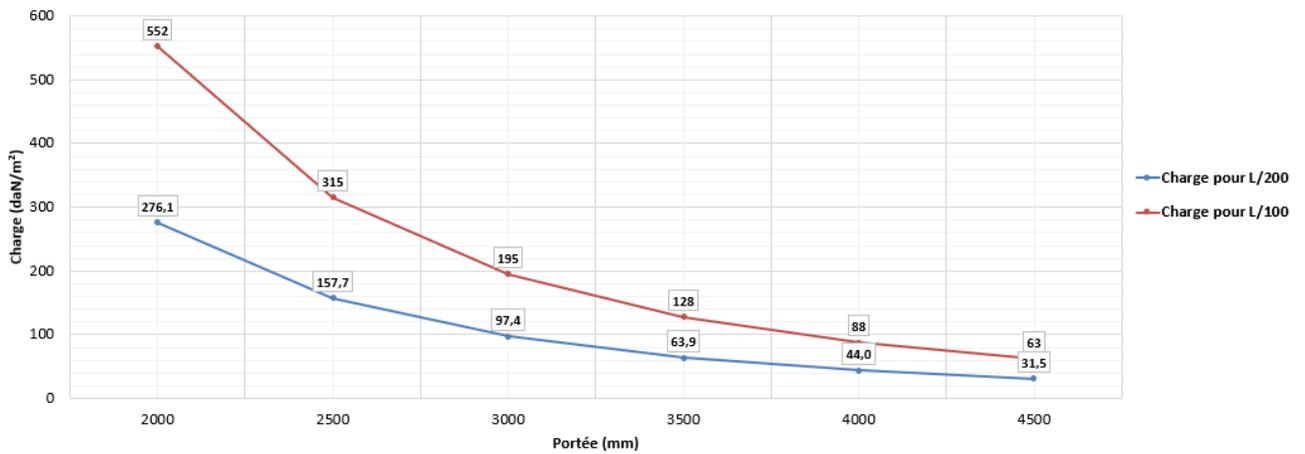
Abaque de charges - 10% de pente
AXTA58R16 - AXAQA61 - AXTA61S



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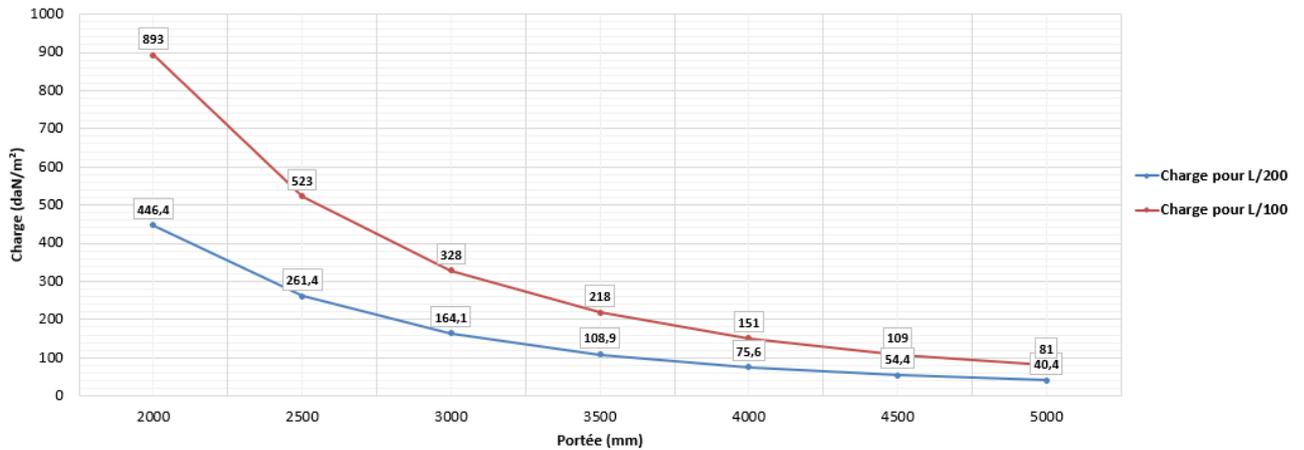
Foam 63 Panels / Acoustic Foam 66/ Acoustic Foam + 66 / Foam Silence 66

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



Foam 82 Panels / Acoustic Foam 85/ Acoustic Foam + 85/ Foam Silence 85

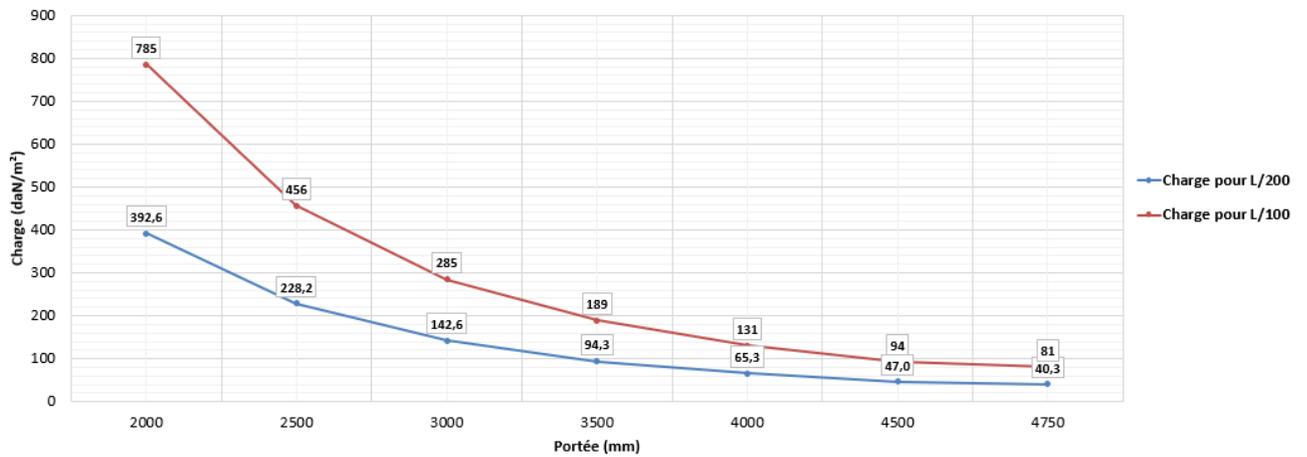
Abaque de charges - 10% de pente
X82R16 - XA85R16 - XA85R16+ - X85SR16



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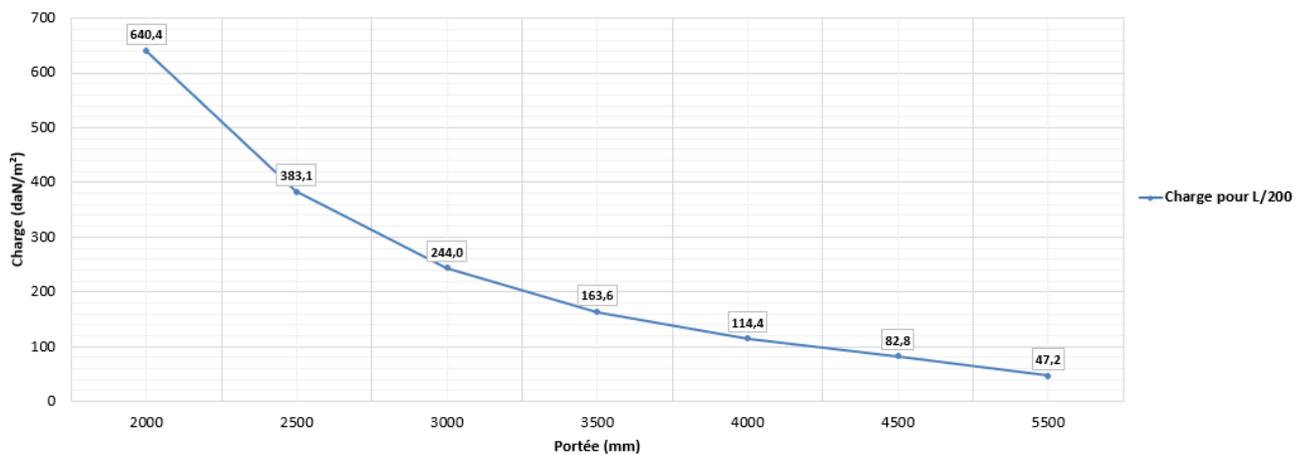
Phonic Tri-layer 98 Panels/Phonic Quadri-layer 98 /Phonic Tri-layer Silence 95

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



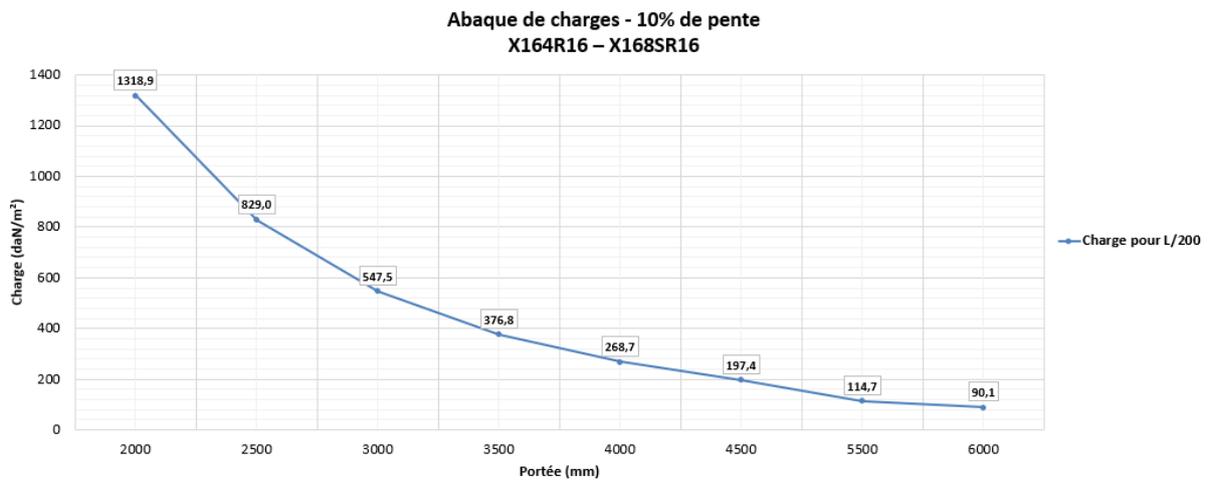
Foam 102 Panels/ Acoustic Foam 105/ Acoustic Foam + 105/ Foam Silence 105

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



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Foam 164 Panels / Foam Silence 168

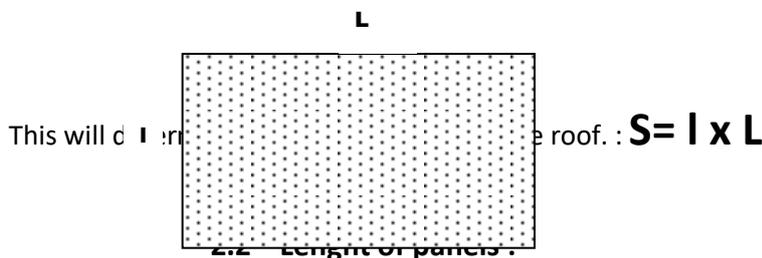


2. Layout of the sunroom roof:

2.1 Size of Sunroom :

For the realization of a site, please determine the width of the sunroom (I) and the length of the sunroom (L) desired.

Note: The self-supporting panels are intended for the production of sunroom roofs in simple, square or rectangular shapes.

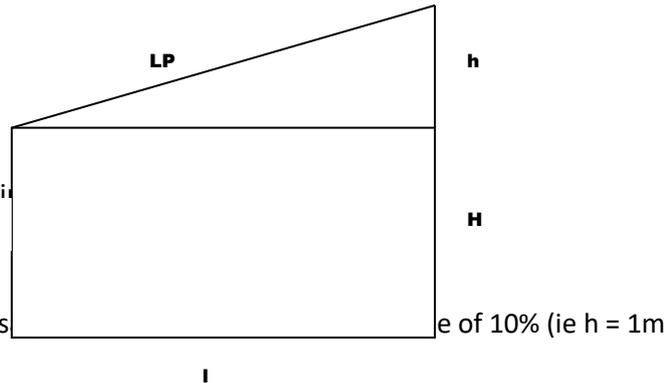


2.2.1 Determining the slope of the roof (minimum installation slope 10 %):

For this it will be necessary to determine the overall dimensions:

- The height H of the roof projected onto the lower part (at the level of the runner)
- The height h possible on the upper part of the projected sunroom, taking into account the existing parts of the house (sponges, windows, etc.).

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The total height of the roof at the highest point is **H**.

The slope will thus be: **h / l** (in %).

Note: It should be noted that it will be necessary to have a minimum slope of 10% (ie $h = 1m$) for $l = 10m$

2.2.2 Length of panels:

The calculation of the length of the panels is carried out in several ways:

*** Pythagore :

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

*** Tangent:

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

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

*** Or measure on site !

2.3 Number of self-supporting panels :

The number of panels N will be:

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

Nota : To have a more pleasant aesthetic, it is possible to cut the last non-whole panel in 2 in order to position the 2 pieces on the 2 sides in order to have better symmetry.

2.4 Number of pareclosables panels:

The number of panels N, will depend on the geometry of the load-bearing structure and the center distance between rafters, which will be defined according to snow and wind rules.

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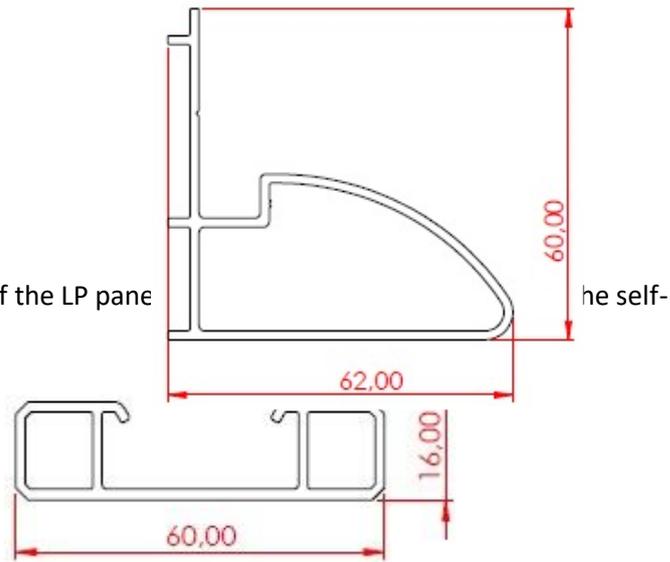
3. Cutting of insulation panels, aluminum profiles and accessories:

3.1 Lower Wall Bracket :

The interior aluminum wall bracket will be cut to the width of the sunroom L minus the thickness of the aluminum posts against the façade:

3.2 Jonction Key :

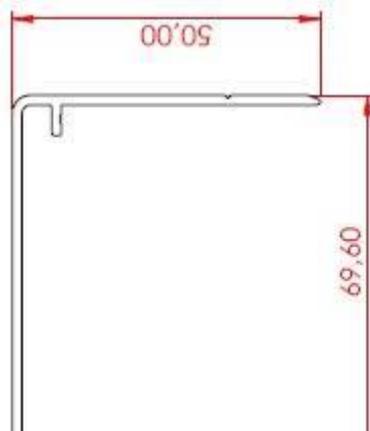
Cut the junction keys to the length of the LP pane supporting aluminum panels.



3.3 Edge 60 :

The length of the edge will correspond to the periphery of the sunroom. For a rectangular sunroom we will have a length of: $L (+ s) + 2 \times (l + s)$

It will be necessary to take into account the fall associated with the miter cut and therefore have an extra length s:



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3.4 Panneaux isolants de toiture de véranda :

The sunroom insulating panels (self-supporting) will be cut to the length LP + 10 cm minimum, by integrating an excess length of 10 cm minimum approximately to ensure an overflow of the panels in the gutter in relation to the runner.

Nota :

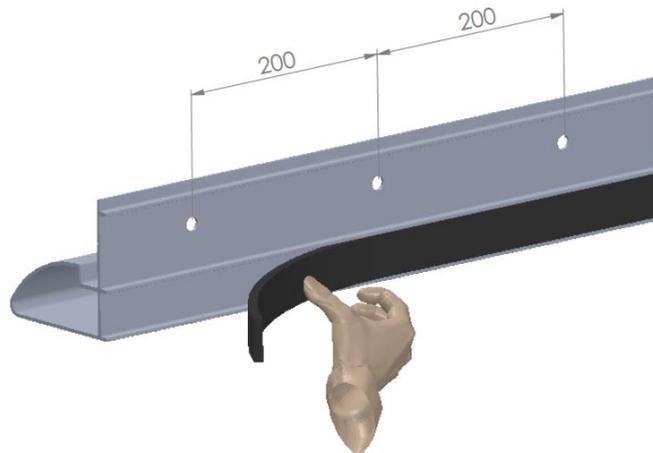
In order to have a pleasing aesthetic, it is suggested, for sunroom widths that are not multiples of 1200 mm, to have the 2 self-supporting end panels cut to the same width. In this case, the assembly will start on the middle part of the sunroom so that in the end the 2 panels on the sides of the sunroom are placed last (the cut can be made at this time to ensure the correct dimension width cut).

4. Mounting of the lower wall mounting profile:

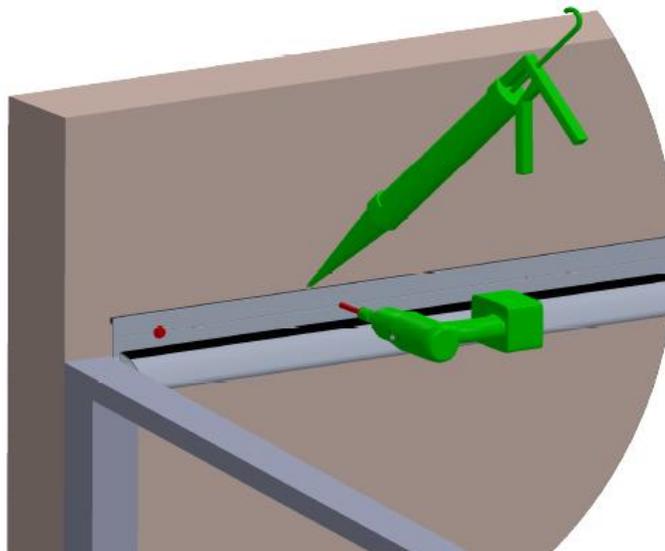
The different operations to be carried out:

- Mark the height of the sunroom roof (H + h) on both ends;
- Mark the position of the Lower Wall bracket with a chalk line, taking into account an additional height compared to the gable frame (see §4 bimetal effect table). Make sure that the supporting wall does not have too many irregularities. In this case, it will be necessary to straighten the mortar in order to have a flat part for fixing the lower wall bracket;
- Make the holes on the lower wall bracket with a spacing of 200 mm between each hole;
- Mark the fixing holes on the wall and drill using the lower wall bracket;
- Place a 15x20 mm self-adhesive "compressing" gasket on the back of the lower wall mounting profile to ensure a good seal;
- Secure the lower wall bracket to the supporting wall using aluminum plugs and screws, or by making epoxy chemical seals;

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- Make a bead of polyurethane or silicone mastic between the lower wall bracket and the upper wall:

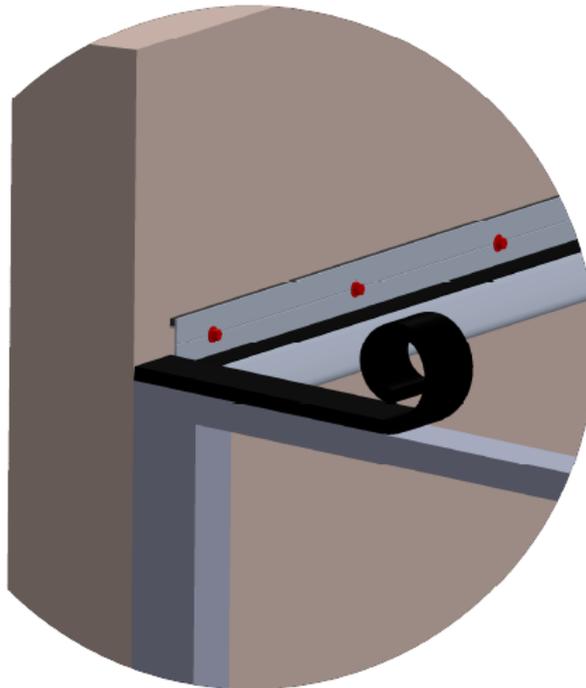


5. Installation of the expansion joint on the gears:

Table of negative arrows in mm (winter bimetal effect)

Reach	Panel Thickness 62 mm	Panel Thickness 82 mm
5 metres		25 mm
4.5 metres	27 mm	20 mm
3.5 metres	16 mm	12 mm
2.5 metres	7 mm	5 mm

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6. Installation of self-supporting panels:

When starting up the roof, it will be necessary to remove the protective film over approximately 5 cm, over the entire periphery of the panels (on all 4 sides) and on both sides, in order to be able to remove the protective film when the whole roof will be mounted.

In addition, on the inside of the panels, the side resting on the runner (at the level of the seal, before the support on the runner side), cut the interior aluminum facing, using a circular saw across the entire width of the panel. The realization of this saw cut with a width of 3 mm, will ensure the thermal break.

6.1 Installation of the first self-supporting panel:

- Width of the multiple sunroom of 1200 mm:

The installation of the first panel can start either way from one of the gables. The choice will be made according to the ease of installation and possibly according to the external environment (wall, tree, etc.).

- Width of the sunroom not multiple of 1200 mm:

The installation of the first panel will start on the middle part of the sunroom (middle).

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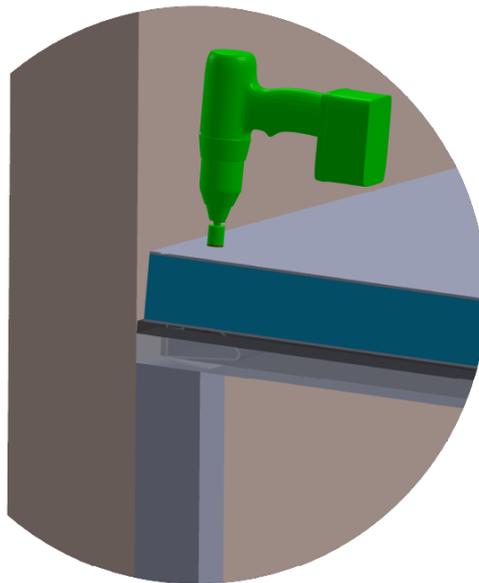
The first panel is placed on the lower wall bracket and on the sunroom runner, while maintaining good perpendicularity of the panel to the lower wall profile and / or to the runner.

6.2 Fixing of the first self-supporting panel:

When the first panel is positioned correctly on the lower wall bracket, it will be necessary to fix it in order to be able to position the other side panels in the best conditions.

The panel will be fixed with four SFS self-drilling screws (Ref. : SXC5-S19-5.5 length to be defined depending on the thickness of the panel) on the lower wall bracket.

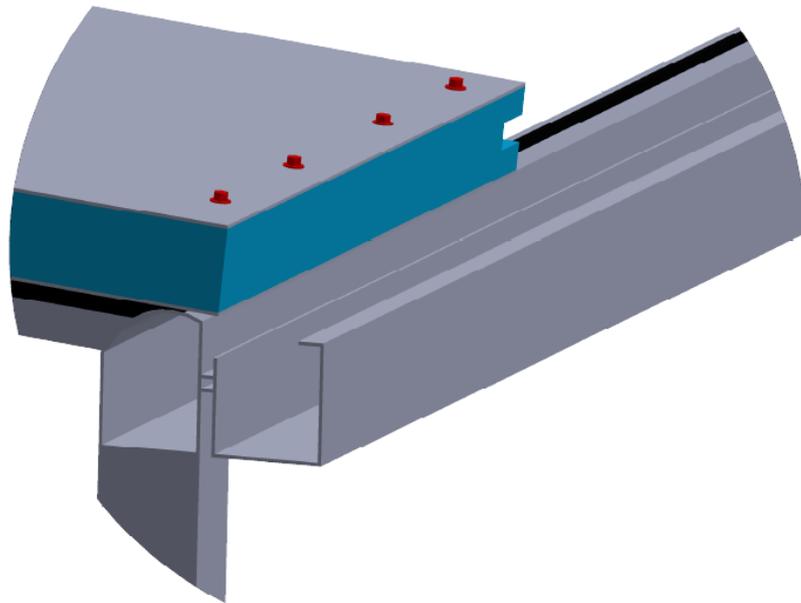
>> At the level of the upper part of the roof on the lower wall mounting profile:



>> At the level of the lower part of the roof on the sand pit:

The panel will be fixed with four SFS self-drilling screws (Ref: SXC5-S19-5.5x87 for 52 and 55 mm thickness) on the runner.

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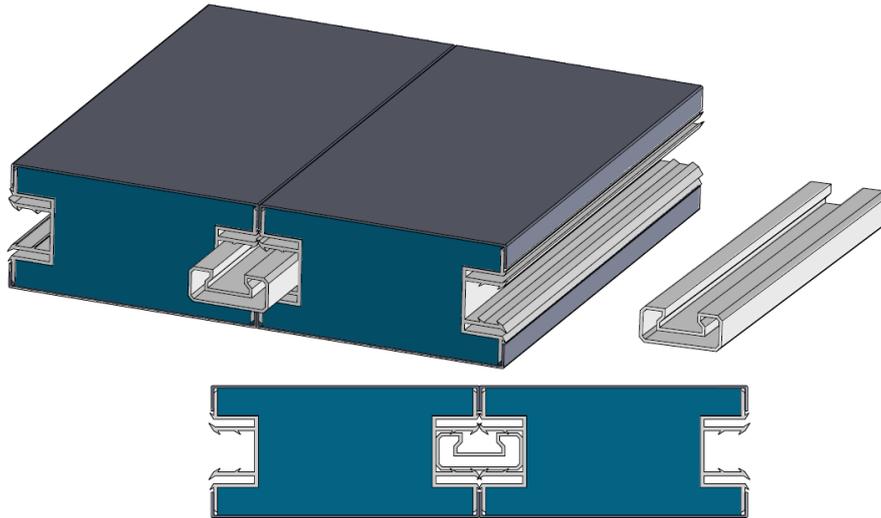


6.3 Installation of the junction Key

6.3.1 Clé de jonction PVC (uniquement pour les panneaux avec habillage de chants en PVC) :

The PVC junction key cut to length will be fitted into the edge trim profile of the panel, leaving the excess length of 10 to 15 mm in the lower part of the sunroom roof to allow water to drain or runoff in the drainage channel.

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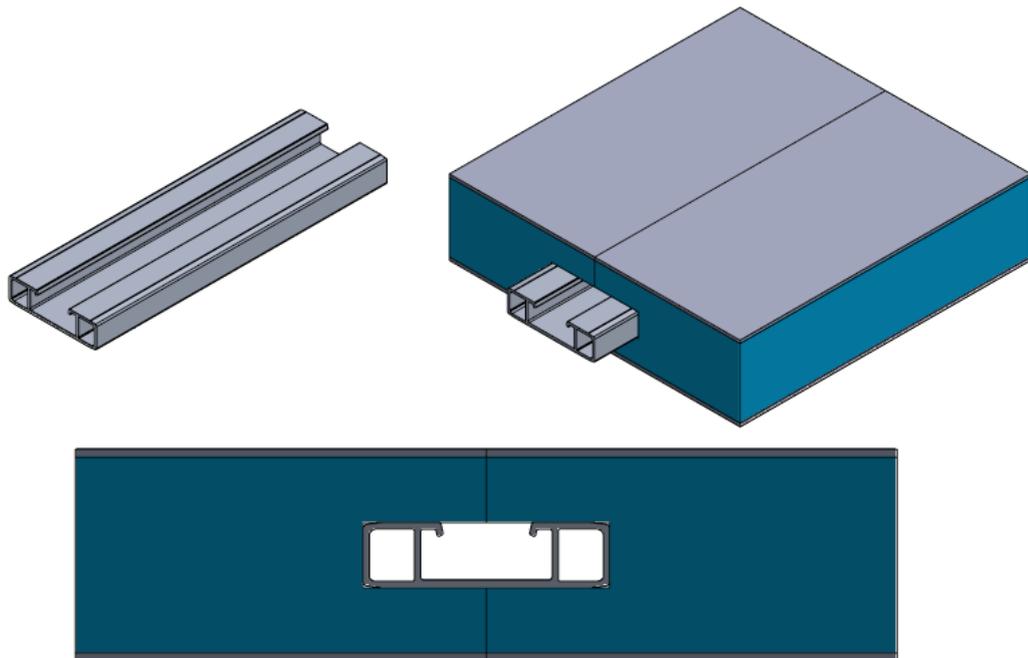
After having cut the appropriate length of the junction key (7.5ml bar) by integrating an excess length of 10 mm minimum, the various operations to be carried out are:

- Lubrication of the junction key with a silicone spray;
- Insertion of the key into the panel edge trim starting from one side of the panel (generally upper part);
- Let the junction key protrude 10 mm from the lower part of the roof to allow rainwater to flow;
- Continue fitting the junction key along the entire length of the panel by hand.

6.3.2 Aluminum junction key (only for panels with grooved insulation) :

The junction key cut to length will be fitted into the groove of the panel, leaving the excess length of 10 to 15 mm in the lower part of the roof of the sunroom to allow runoff water to flow into the evacuation channel.

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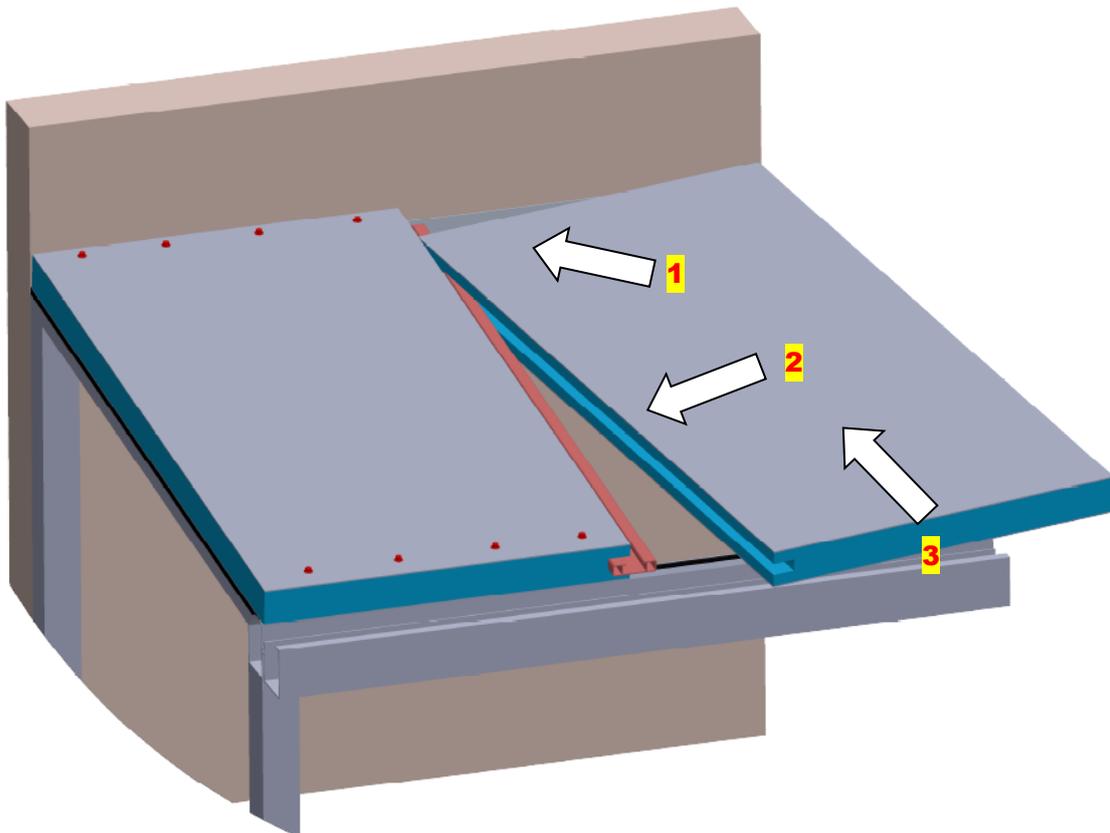
After having cut the adequate length of the aluminum junction key (7.5 ml and 4.5 ml bar) by integrating an extra length of 10 mm minimum, the various operations to be carried out are:

- Lubrication of the junction key with a silicone spray;
- Interlocking the key in the edge grooving of the panel starting from one side of the panel (generally upper part)
- Leave the junction key in the lower part of the roof to overflow by at least **10 mm minimum** to allow rainwater to flow;
- Continue fitting the junction key along the entire length of the panel by hand.

7. Installation of the following self-supporting panels:

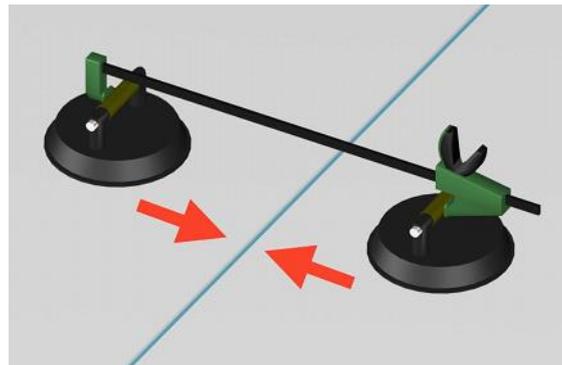
The other panels will be put in place according to the description below (scissor movement):

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- Installation of the first panel on the runner and the upper wall profile;
 - Fix the panel on the upper wall bracket (see § 4.2.) With four SFS self-drilling screws (Ref .: type SXC5-S19 5.5, length to be defined according to panel thickness);
 - Fix the panel on the end of the runner (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 junction key along the entire length of the panel by hand;
 - Positioning of the next panel in contact with the previous panel and bringing the latter together with a chisel movement, from top to bottom (see previous drawing);
 - Possible installation of suction cups on the juxtaposed panels, to properly adjust the edge-to-edge junction between each panel;
- Installation of «one hand» clamps ;
 - Actuate the clamps so that the panels make contact as shown in the drawing below

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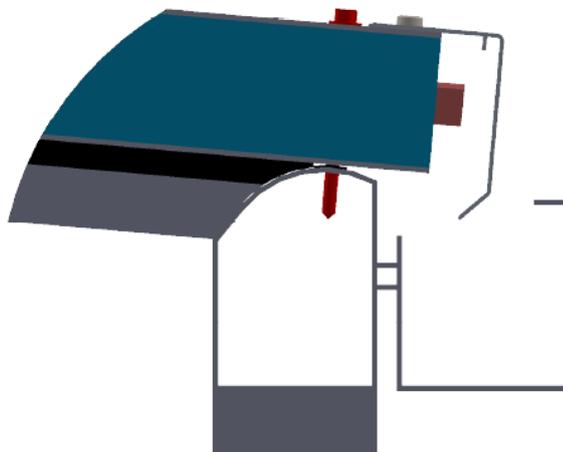


After fitting, push the panel in order to press it against the upper part of the upper aluminum profile

When the second panel is correctly positioned and properly assembled with the previous one, proceed with fixing the latter to the upper and lower part of the roof (see § 4.2.) With 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.

8. Installation of the edge profile on the gutter side



Installation of an edge on a double bead of silicone sealant at the ends of the panels, then fixing with self-drilling stainless steel screws (eg: SFS-SXC519 auto screws)

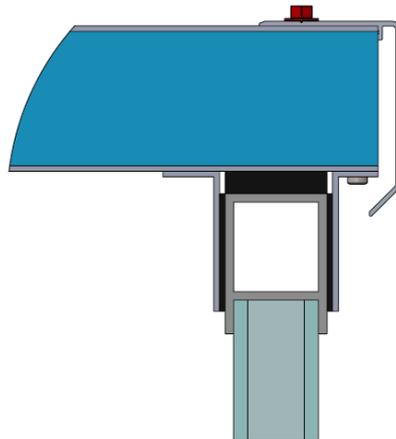
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It will be necessary to make a miter cut of the aluminum edge between the runner and the gables.

9. Finishes on the gable :

Finishing on the gables consists of carrying out the following operations:

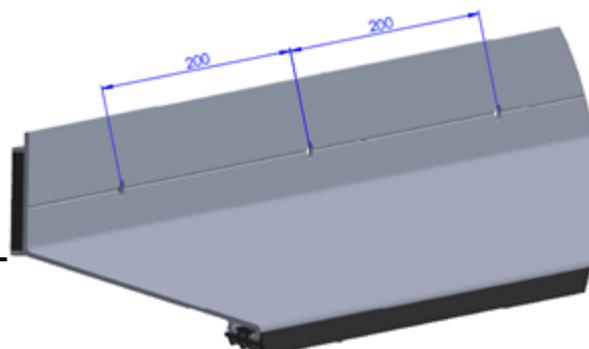
- Installation of two hydrophobic self-adhesive foam gaskets on the side parts of the upper profile of the glazed frame;
- Installation of a gable joint cover (aluminum angle type) to ensure the finish and aesthetics inside the sunroom, by double-sided gluing;
- Installation of an edge on the gables outside the sunroom by fixing with self-drilling stainless steel screws (eg: SFSSN2 / 13-7981-3.9x19 auto screws)



- Nota : The gable panels may move slightly due to the bimetallic phenomenon during a temperature difference between the internal and external facings (example: sunshine in summer or heating inside the sunroom in winter, etc.)

10. Installation of flashing :

10.1 Drilling and installation of the seal

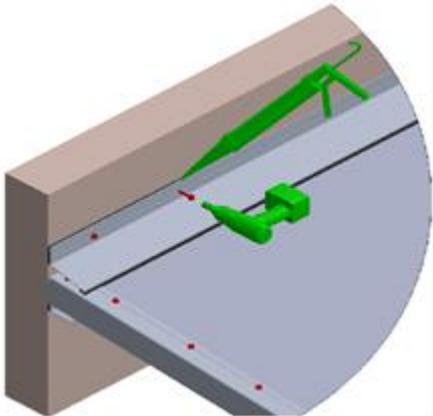


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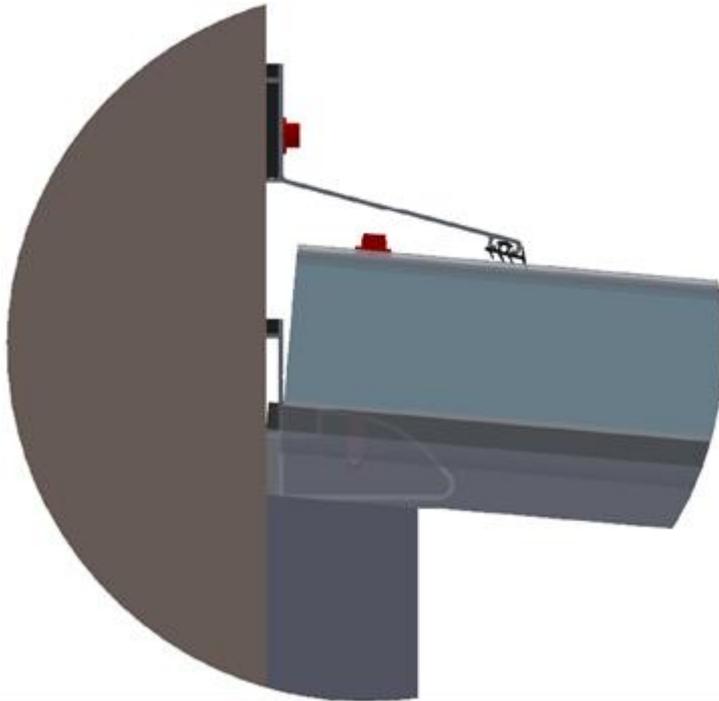
- Make the holes on the lower wall bracket with a spacing of 200 mm between each hole;
- Position the seal (JJ 407) in the groove of the upper wall profile;
- Place a 50x20 mm self-adhesive "compriband" seal on the back of the lower wall mounting profile to ensure a good seal.

10.2 Installation of flashing on the wall :

- The flashing joint must be firmly against the external face of the panels.
- Fix the lower wall bracket on the supporting wall using aluminum plugs and screws, or make epoxy chemical seals (always ensuring that the joint is properly placed on the panels)



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Sheet metal bending will be required to seal and finish the side sections of the flashing.

11. Finishing Specific for membrane panels

The self-adhesive sealing tape will be positioned over each panel junction with membrane. Over the entire length of the junction in the outer part of the roof, to perfect the seal.

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Optimal application range: [10 ° C to 38 ° C]

Unroll the membrane at the last moment on the site, the panel must be clean and dry.

Compulsory cleaning of the surface to be covered with VHB 3M degreaser (Ref. AV Composites: 1092).

Then apply the 3M reference primer: "3M 94 primer" (Ref. AV Composites: 1091) only on the area covered by the adhesive strip (50mm).

Apply UNIFORM PRESSURE to the membrane with a masking roller of at least 1 kg / cm² per lamination.

