



EXTRUBOIS: Built for tomorrow

The innovative solution to combine construction and respect for the environment.

TECHNICAL GUIDE WOOD COMPOSITE DECKING

IMPORTANT: For better use of the products, EXTRUBOIS composite wooden decking must be installed in accordance with the manufacturer's installation instructions described in this technical guide. Failure to comply with these instructions will void all product warranties.

EXTRUBOIS deck boards are designed for pedestrian outdoor use.

GENERAL PRINCIPLES OF INSTALLATION

- The boards and joists used for the decking must be perfectly ventilated.
- The installation way of the decking must avoid any stagnation of water by facilitating its evacuation.
- A slope of at least 1.5% facing outwards must be fitted to get a good runoff of water.
- The installation of a geotextile film under the decking prevents plant growth.
- The distance between the joists and the expansion gap between the boards must be followed in accordance with the manufacturer's instructions.
- Composite joists must not be in direct contact with natural terrain or sealed in concrete.
- **The installation of a composite decking cannot be undertaken at an ambient temperature below 5°C.**
- **Composite wood joists are not suitable for structural uses.** They must imperatively laid on on a linear support over their entire length.
- The boards are compatible with installation on our structural aluminium joists, wood joists 50mm x 50mm or 45mm x 70mm or joists made of naturally durable solid wood or of durability conferred in class IV.
- **For installation on pedestal, it is imperative to install the boards on aluminium or wooden structural joists.**

IMPORTANT:

The recommendations set out in this technical guide only apply to decking for private use. They do not concern the design and installation conditions of wooden composite decking in public places which must be the subject of a preliminary study and subject to local regulations.

❖ INSTRUCTIONS AND PRECANTIONS PRIOR TO THE DECKING INSTALLATION

- **STORAGE OF DECKING BOARDS AND JOISTS FROM EXTRUBOIS**

EXTRUBOIS deck boards and joists must be stored on a flat surface, in their original packaging, in a perfectly ventilated dry place and protected from light. The center distance of their support must not exceed 40 cm.

Failure to comply with this instruction could cause deformation of the boards and joists.

After installation, the scraps can be landfilled.

- **MATERIAL AND TOOLING**

Composite wood is a hard, abrasive material. For quality work, it is therefore recommended to use bits and saw blades made of carbide.

- **RECOMMENDATIONS**

Gloves and protective glasses are recommended during the installation of the decking to protect against dust which can cause slight skin and eye irritations.

- **DISCOLOURATION OF THE BOARDS**

EXTRUBOIS boards follow a discolouration period of three to four months, in order to achieve stabilization of their colour. This natural phenomenon occurs from contact with UV. Wood print renderings on Swing blades naturally fade and are not covered by the EXTRUBOIS warranty.

- **EXPANSION OF COMPOSITE WOOD DECKING BOARDS**

By accumulating the heat, the composite wood deck boards will expand. The expansion is proportional to the size of the boards. An expansion gap must therefore be fitted around the boards, as well as at the junction of 2 boards in the case of installation with double joists.

- **VENTILATION OF THE BOARDS**

Air must be able to circulate freely under the deck to guarantee ventilation of the boards. A 15 mm air inlet must be fitted on the periphery of the deck and in particular above the adjoining walls. The ventilation space between the joists helps to isolate and regulate the temperature of the deck boards and improve their longevity.

Quantities required per m² for a private use decking installation:

MODELS	JAZZ	SWING	ORIGIN	SAMBA	ENDURO
Boards sections	21 x 150	21 x 200	21 x 200	20.5x150	21x150
Decking boards	6.5 meters	5 meters	5 meters	7 meters	7 meters
Joists with 300cm center distance	3.5 meters				
Fixing clips	14	10	10	14	14
Blocking clips	6	4	4	6	6
Starting clips	4	4	4	4	4
Junction clips	2	2	2	2	2

Table 1 Quantities required per m² for a private use decking installation

❖ INSTALLATION OF THE EXTRUBOIS COMPOSITE WOOD JOISTS.

Composite wood is a unique material, the composition of which varies according to the manufacturer. The installation of EXTRUBOIS deck boards combined with EXTRUBOIS joists is recommended. With the same composition, the coefficient of expansion of each product is identical. The boards and the joists are therefore perfectly compatible with each other, technically and aesthetically.

Installation on a concrete screed or on existing tiles

Given their non-structural nature, the composite wood joists must be laid entirely on their support.

EXTRUBOIS composite wood decking may only be used on a concrete screed or tiled floor.

Attention to the installation of the joists, the V-shaped groove must be on the ground side so that the joist is not completely in contact with the ground. This allows the joists to drain a minimum of moisture and therefore a slight passage of air.

It is imperative to build a minimum slope of 1.5% facing outwards, parallel to the joists in order to drain the bearing surface and allow the flow of runoff water.

It is also essential to ensure the perfect flatness of the support before starting to install the joists. The installation of the decking will thus be facilitated.

It is however possible to raise the EXTRUBOIS joists locally with small blocks of variable thickness arranged at regular intervals (<30 cm) to correct any surface defects, or even to arrange the necessary slope. The blocks must be made of rigid and rot-proof materials (plastics) and fixed to the support with dowel pins and stainless steel screws. There should not be any overhang higher than 30 mm at the two ends of the joists.

Given the thickness of the joists (30mm) and the thickness of EXTRUBOIS deck boards (21mm), i.e. 51mm, the base space (example: door sill level) necessary for the layout of the deck must be higher than 65 mm to allow a door threshold of at least 14 mm.

Depending on the state of the support, it is advisable to guard against possible plant growth by using a geotextile film (100g / m²) under the joists.

The joists must be fixed at 15 mm from the peripheral walls or from any obstacles likely to block their expansion. They must be laid flat on (side 60 mm flat). This space also contributes to the ventilation of the decking. (See Figure 2)

A space of 10mm must also be provided between two joists laid end to end.

The installation of spacers between the joists which would help block the flow of runoff water between the joists is strongly not recommended.

In no case the joists can be sealed directly into the concrete or fixed to the ground because of expansion except for the following particular cases:

In the case of a particular installation where the fixing would be essential in some places, in the case where the maintenance would be difficult, the joists in composite wood can be fixed to the support by drive anchors.

In this case there will be 1 SINGLE FIXING, in the MIDDLE of EACH joists.

No other fastening should be used on the rest of the joist to allow the expansion.

A pre-drilling to the diameter of the anchor is then imperative to avoid any potential cracks in the joist.

The length of the anchor must be 2.5 x the thickness of the joist (2.5 x 30 mm = 75 mm).

IMPORTANT

It is a must to double the joists at the ends of the EXTRUBOIS composite wooden decking boards laid in modules of identical lengths, by fitting between the decking boards a 10 mm play that will also guard against water traps which contributes to strengthening the framework of the decking. In general, it is a MUST to double the joists at each board end.

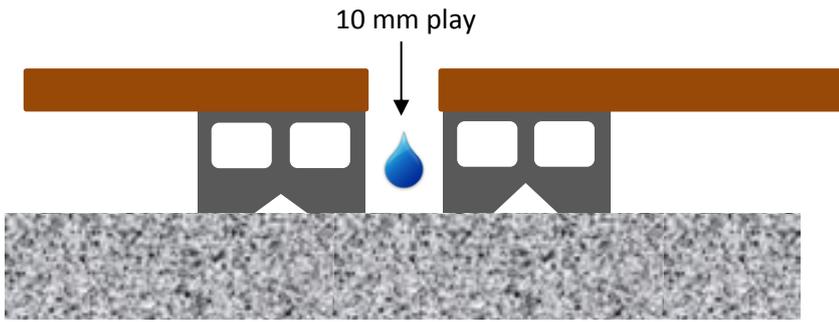


Figure 1 Obligation to double the joists, i.e., one joist per end of deck boards, the use of the junction clip for double joist is a must.



Junction clip

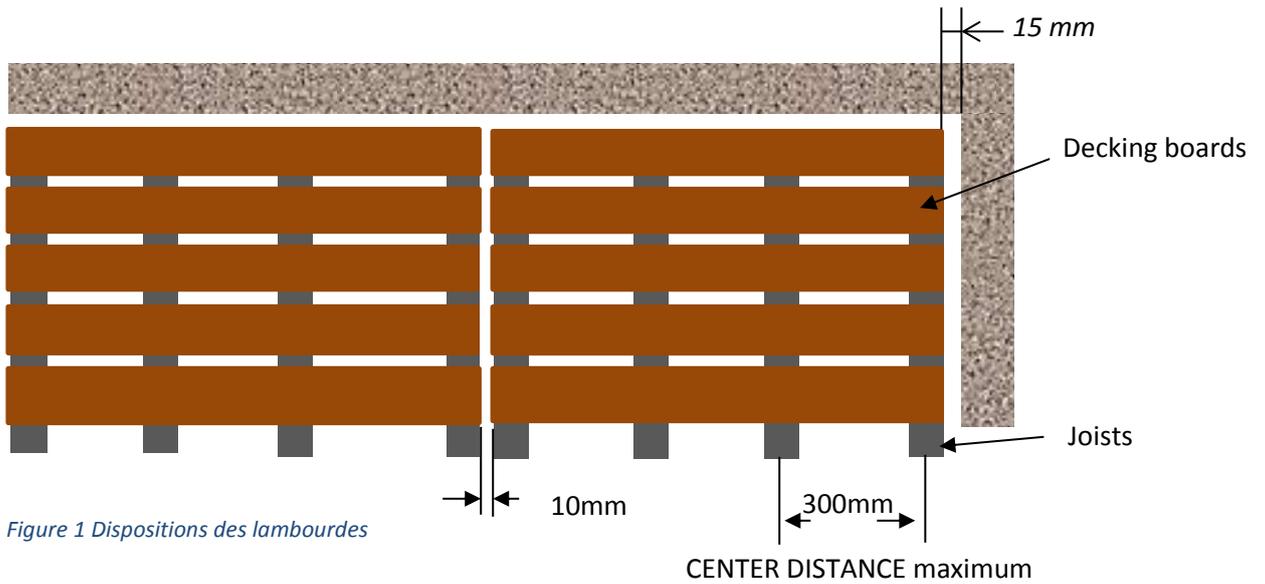


Figure 1 Dispositions des lambourdes

In order to perfect the ventilation under the decking and allow the evacuation of runoff water, it is advisable to leave on the outside edge of the terrace, behind the covering profile, a space of 15mm and to arrange a set of 5 mm at the edge of the boards to contain the natural expansion of the boards.

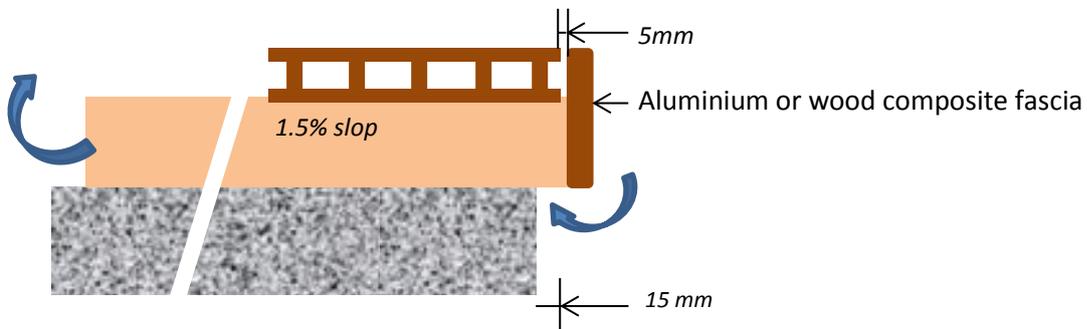


Figure 2 Under decking ventilation

IMPORTANT :

The joists must not be split or edged. They can be momentarily in contact with water but must not under any circumstances remain in the water for a long time.

The joists must be laid entirely on their support. Depending on the design of the decking, it is possible to use 50 mm x 50 mm or 45 mm x 70 mm or joists made of naturally durable solid wood or of durability conferred in class IV to maintain composite joists which could not be partially in contact with the ground.

❖ INSTALLATION OF EXTRUBOIS STRUCTURAL ALUMINIUM JOIST

Installation on a concrete screed or on existing tiles.

Aluminum structural joists can be laid on uneven ground.

If necessary, a wedging will be necessary and it will have to be carried out with suitable plastic shims of dimension 60 mm x 40 mm. These must be placed between the existing floor and the underside of the aluminum structural joist.

The distance between 2 setting points must not exceed 500 mm (50 cm).

The space between the existing floor and the underside of the joist at the point of contact must not exceed 15 mm, beyond that an adjustment of the existing floor is a must.

The start and end of the aluminum structural joist must be laid either on the existing floor or on suitable plastic shims of dimension 60 mm x 40 mm.

The appropriate plastic shims, dimension 60 mm x 40 mm, must be fixed to the ground with dowel pins and stainless steel screws.

It is imperative to build a minimum slope of 1.5% facing outwards, parallel to the joists in order to drain the bearing surface and allow the flow of runoff water.

Given the thickness of the aluminum structural joists (30mm) and the EXTRUBOIS deck boards (21mm), i.e. 51mm, the base space (example: door threshold level) necessary for the layout of the decking must be higher than 65 mm to allow a door threshold of at least 14 mm.

The joists must be fixed at 15 mm from the peripheral walls or from any obstacles. They must be laid flat (the surface 60 mm flat towards the ground). This space also contributes to the ventilation of the decking.

A space of 5 mm must also be provided between two (2) aluminum structural joists laid end to end.

The installation of spacers between the aluminum structural joists which would help block the flow of runoff water must be avoided.

In no case may the aluminum structural joists be sealed directly into the concrete or fixed to the ground.

In the case of a particular installation where the fixing would be essential in some places, in the case where the maintenance would be difficult, the structural aluminium joists can be fixed to the support by drive anchors.

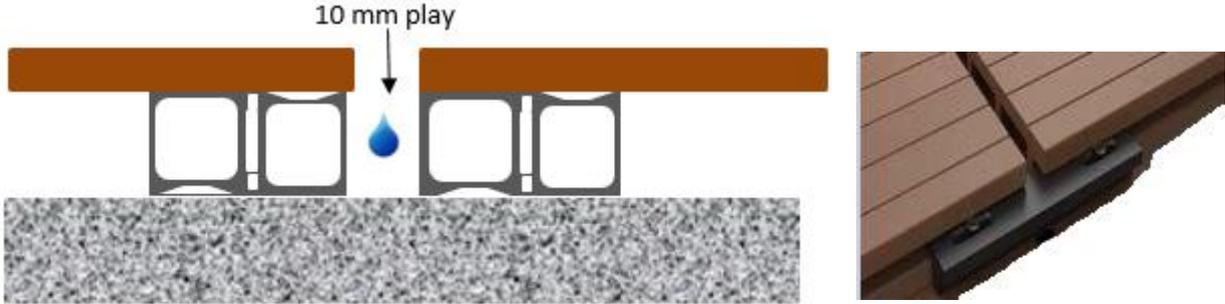
In this case there will be 1 SINGLE FIXING, in the MIDDLE of EACH joists.

No other fastening should be used on the rest of the joist to allow the expansion.

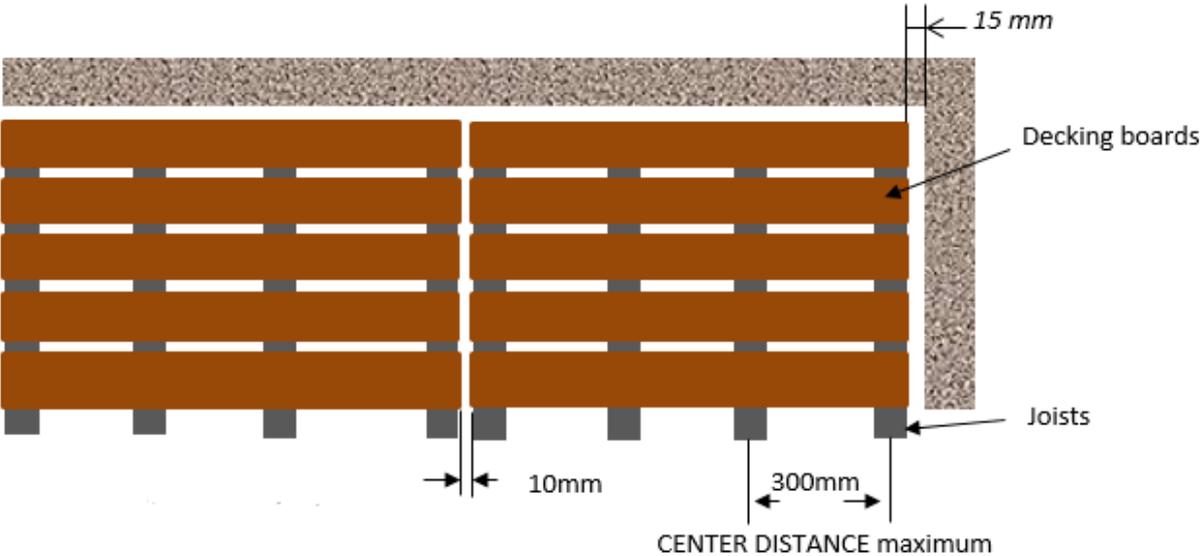
A pre-drilling to the diameter of the anchor is then imperative to avoid any potential cracks in the joist. The length of the anchor must be 2.5 x the thickness of the joist (2.5 x 30 mm = 75 mm).

IMPORTANT

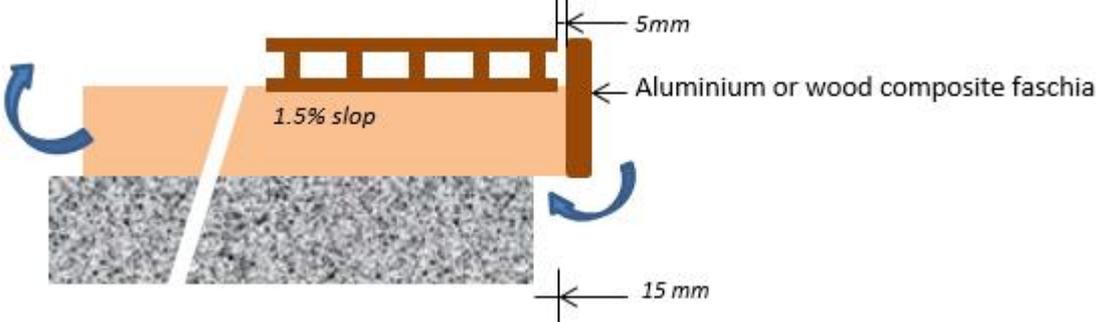
It is a must to double the joists at the ends of the EXTRUBOIS composite wooden decking boards laid in modules of identical lengths, by fitting between the decking boards a 10 mm play that will also guard against water traps which contributes to strengthening the framework of the decking. In general, it is a MUST to double the joists at each board end.



Obligation to double the joists, i.e., one joist per end of deck boards, the use of the junction clip for double joist is a must.

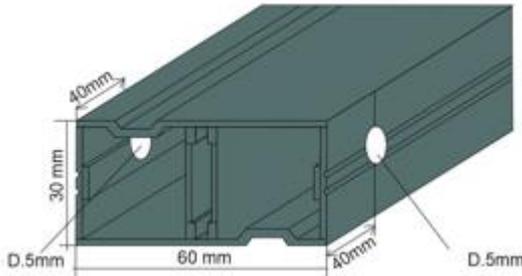


In order to perfect the ventilation under the decking and allow the evacuation of runoff water, it is advisable to leave on the outside edge of the terrace, behind the covering profile, a space of 15mm and to arrange a set of 5 mm at the edge of the boards to contain the natural expansion of the boards.

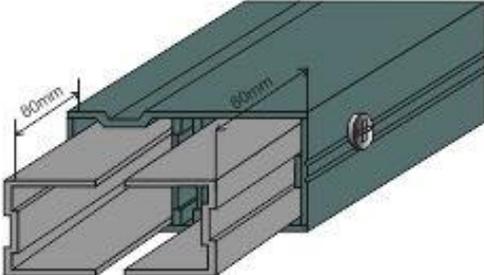


EXTENDING AND ASSEMBLING THE ALUMINUM STRUCTURAL JOIST

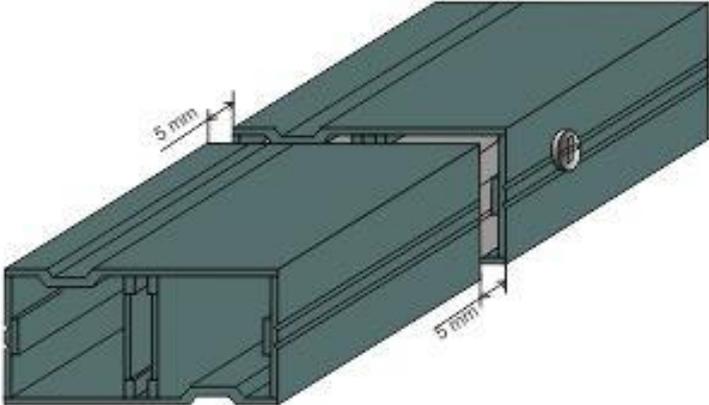
Step 1: Mark a D5mm hole, using 1 measure tape and 1 pencil, the dimension of 40 mm on each side and from one of the ends of the aluminum structural joist (on the small side 30 mm). Take 1 drill with a 5 mm diameter drill bit and drill 1 hole at the location of your marks (40 mm) on both side of the aluminum structural joist.



Step 2: Insert the 2 extensions / connectors into the aluminum structural joist, leaving a visible part of 80 mm - To fix the 2 extensions / connectors use the 2 stainless steel screws provided. Screw the 2 stainless steel self-drilling screws with a PZ2 bit on both side of the aluminum structural joist.



Step 3: Insert the next aluminum structural joist in the 2 extensions / connectors, leaving 1 space of 5 mm between the 2 joists tips.



IMPORTANT : NEVER SCREW / FIX THE NEXT STRUCTURAL ALUMINIUM JOIST TO THE 2 EXTENSIONS / CONNECTORS

- ❖ **INSTALLATION OF STRUCTURAL ALUMINIUM JOIST ON PLASTIC PEDESTALS**
(See RECOMMENDATION and INSTRUCTION from the manufacturer of adjustable plastic pedestal)

Installation on adjustable plastic pedestals (CE) on concrete screed or on existing tiles

The structural aluminum joists can be installed on adjustable CE-certified plastic pedestals.

The distance between 2 adjustable plastic pedestals must not exceed 500 mm (50 cm).

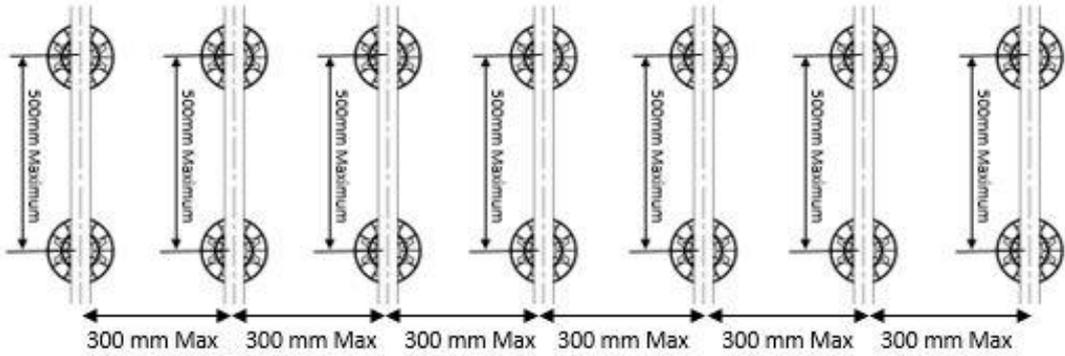


The ends of the aluminum structural joist must laid on an adjustable plastic pedestal.

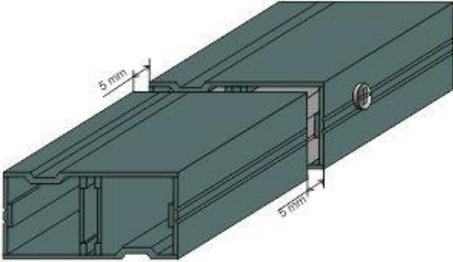
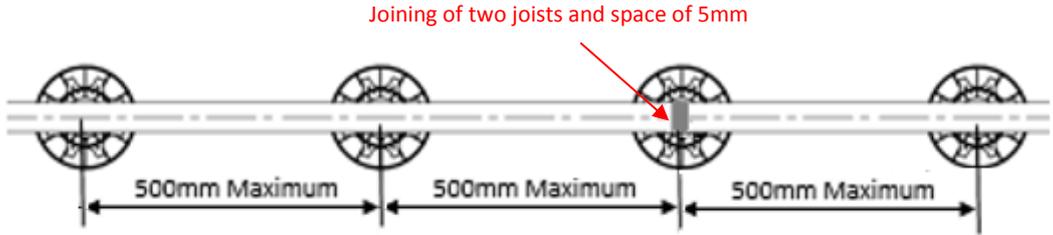
Aluminum structural joists must be fixed on adjustable plastic pedestal with stainless steel screws (screws not supplied).



The distance between 2 structural aluminum joists is 300 mm MAXIMUM.



The joining of 2 aluminum structural joists MUST be done on the axis of an adjustable plastic pedestal. The use of the 2 connectors/extenders screwed on one of the aluminum structural joists is a must. The 2 connectors / extenders + 2 stainless steel self-drilling screws are supplied and inserted in each aluminum structural joist. A play or space of 5 mm must also be left between the two (2) aluminum structural joists.

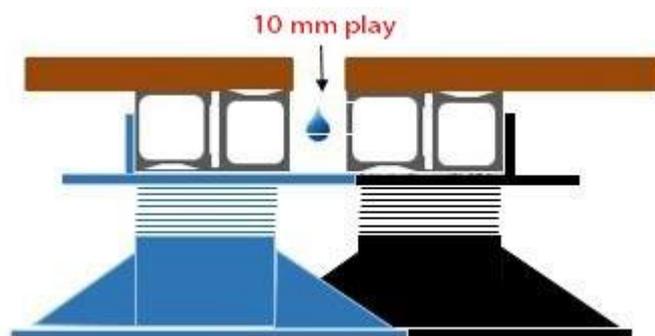
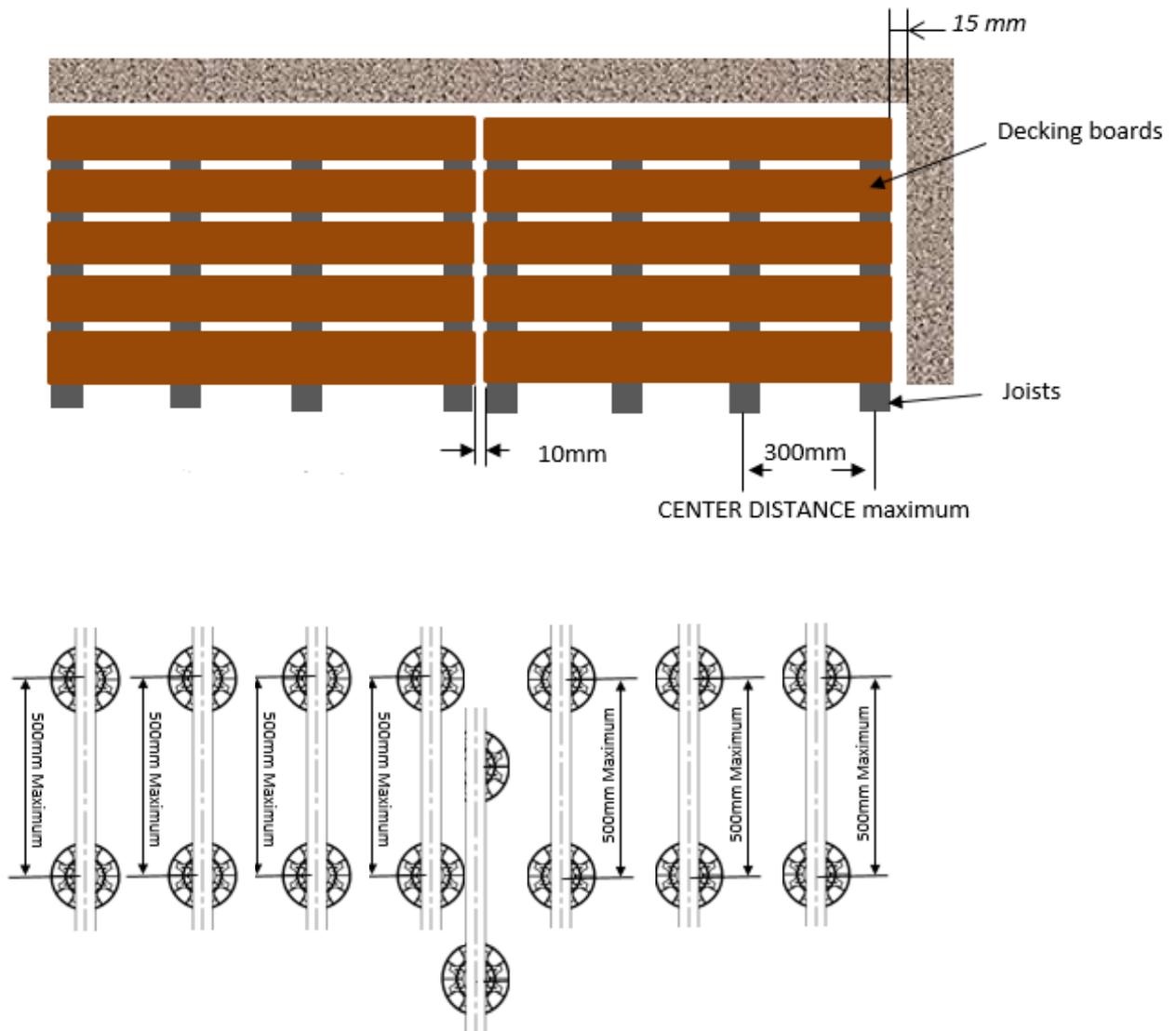


IMPORTANT: NEVER SCREW / FIX THE NEXT STRUCTURAL ALUMINUM JOIST TO THE 2 EXTENSIONS / CONNECTORS

IMPORTANT

It is a must to double the structural aluminium joists at the ends of the EXTRUBOIS composite wooden decking boards laid in modules of identical lengths, by fitting between the decking boards a 10 mm play that will also guard against water traps which contributes to strengthening the framework of the decking. In general, it is a MUST to double the joists at each board end.

❖ INSTALLATION OF DOUBLE ALUMINIUM JOISTS ON PLASTIC PEDESTAL



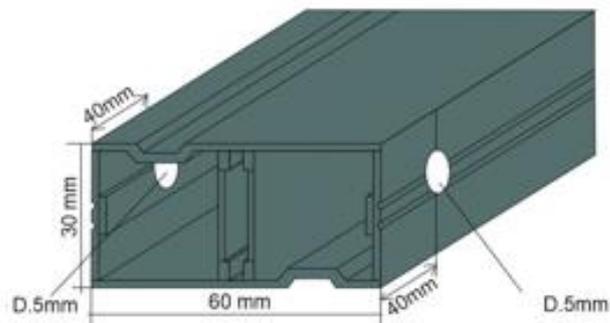
When installing the aluminium joist on plastic pedestal, in order to keep a 10 mm space between the 2 aluminum structural joists when making a “double joist”, the installation of the pedestals must be offset as per the drawing above.



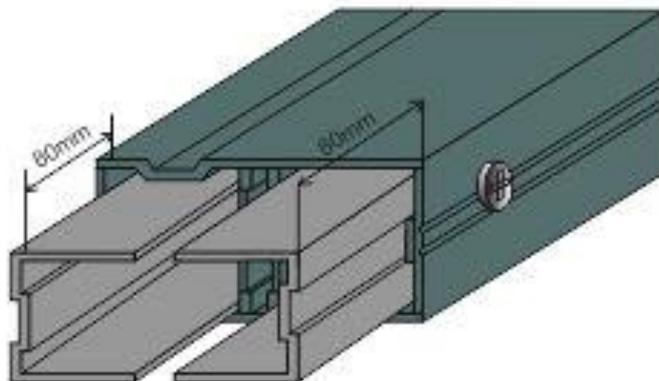
The fixing of EXTRUBOIS composite boards to the double joist in aluminium must be made with the junction clip.

EXTENDING AND ASSEMBLING THE STRUCTURAL ALUMINIUM JOIST

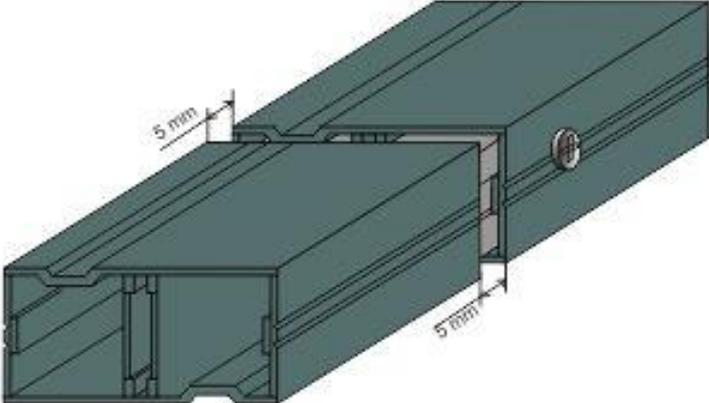
Step 1: Mark a D5mm hole, using 1 measure tape and 1 pencil, the dimension of 40 mm on each side and from one of the ends of the aluminum structural joist (on the small side 30 mm). Take 1 drill with a 5 mm diameter drill bit and drill 1 hole at the location of your marks (40 mm) on both side of the aluminum structural joist.



Step 2: Insert the 2 extensions / connectors into the aluminum structural joist, leaving a visible part of 80 mm - To fix the 2 extensions / connectors use the 2 stainless steel screws provided. Screw the 2 stainless steel self-drilling screws with a PZ2 bit on both side of the aluminum structural joist.



Step 3: Insert the next aluminum structural joist in the 2 extensions / connectors, leaving 1 space of 5 mm between the 2 joists tips.



IMPORTANT : NEVER SCREW / FIX THE NEXT STRUCTURAL ALUMINUM JOIST TO THE 2 EXTENSIONS / CONNECTORS

❖ **INSTALLATION OF EXTRUBOIS DECKING BOARDS.**

EXTRUBOIS composite decking boards must never laid on directly on the ground. Only laying on joists is allowed.

To prevent the effects of expansion of composite wood, the minimum spaces between the boards must be respected. It helps prevent expansion that would be caused by differences in outside temperature, evacuates runoff and contributes to ventilation and temperature regulation of the boards.

Length of the board	1 m	2 m	3 m
Space between two boards	5 mm	5 mm	5 mm
Space between end to end of the boards	5 mm	7.5 mm	10 mm

Table 1 Spacing standards based on board lengths.

The rate of linear expansion and contraction of the boards and joists is 0.0511 mm/m/°C. For an outside temperature difference of 30°C, a 3m board can expand by 6.1 mm. When exposed to the sun's rays, the dark shades absorb UV rays and transform them into heat, which can generate substantial temperature differences which favor the expansion of the boards.

Temperature difference	10°C	20°C	30°C	40°C
Length of the board : 1 m	0.5	1.0	1.5	2.0
Length of the board : 2 m	1.0	2.0	3.1	4.0
Length of the board : 3 m	1.5	3.1	4.6	6.1

Table 2 Blade expansion data according to temperature differences

The laying of the decking boards is in general starting from the adjoining wall to the outside. The first board, spaced 15 mm from the wall or any adjoining obstacle must be held on both sides with the fixing clips inserted in the grooves. It is forbidden to screw the boards from above.

Then lay the boards continuously, taking care to tighten them well while respecting the expansion spaces. The blades must be be perfectly held at the ends to avoid any deformation.

INSTALLATION OF THE FIRST AND LAST BOARD

Option 1: Lateral fixing with screw.

1. After having established the installation configuration of the boards and distributes all the joists on the ground, the first board is ready to be installed.
2. Start with 1 drill by drilling a hole of diameter 4.5mm through the edge of the blade into the joist
3. Screw a stainless steel screw provided in the hole as shown in the diagram Figure 4
4. Use a Torx 10 bit to screw in the stainless steel screws that are supplied with our EXTRUBOIS clips

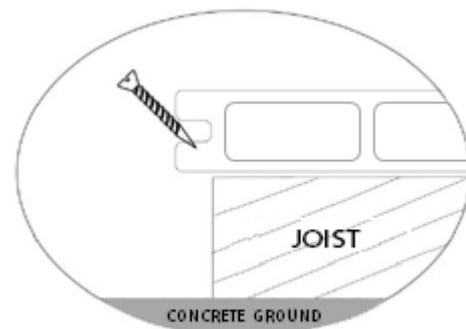


Figure 3

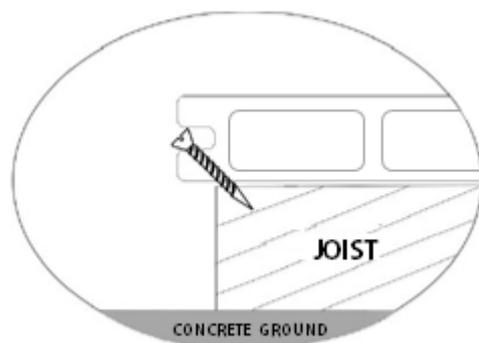


Figure 5

Option 2: Fixing with starting clip.

1. The starting clips must be fixed to the joists.
2. Screw the starting clip with the stainless steel screw provided as shown in the diagram Figure 6.
3. Slide the first board in the starting clip.
4. Use a Torx 10 bit to screw in the screws provided with the EXTRUBOIS clips.

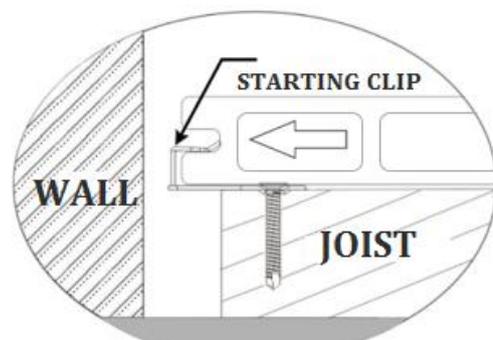


Figure 6

INSTALLATION OF THE DECK

The use of different **EXTRUBOIS** fixing clips in plastic and black phosphated stainless steel with self-drilling stainless steel screws is A MUST. Simple and quick to install, the fixing clips are almost invisible. They must be positioned at **each intersection of the joist and the deck board** and perfectly centered on the joist.

CAUTION: BEFORE FIXING, it is imperative to check the tightening torque of your screwdriver so that the fixing of the clips on the joists is perfect to properly maintain the stability of your deck.

Before proceeding with the installation of the boards, determine the configuration of the Deck/installation style. Plan the location of the different clips (See diagrams in the last for more information).



Figure 7 Decking clips

1. Slide the Fixing Clips and Blocking Clips into the blade grooves so that the screws are facing up (See Figure 8).
2. Once all the clips have been placed, slide the next blade into the clips. (See Figure 9).
3. Screw the Fixing Clips and Blocking Clips onto the joists.
4. Installation of the junction clip (See Figure 10 and video via QR code)
5. Repeat steps 1 to 3 until the Deck is complete.

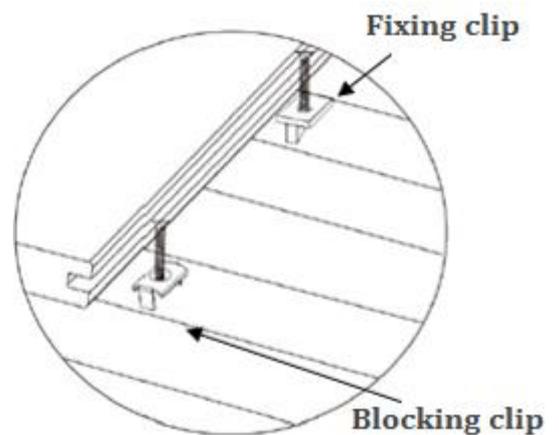
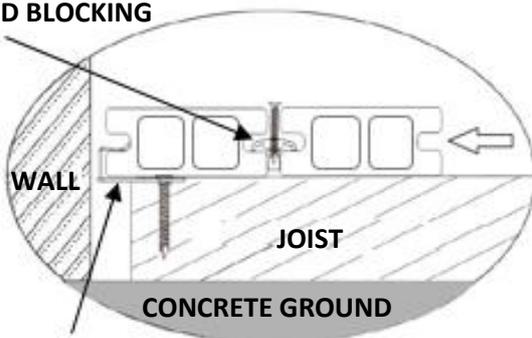


Figure 8

FIXING AND BLOCKING CLIPS



STARTING CLIP

Figure 9



Figure 10

INSTALLATION OF COMPOSITE WOOD FASCIA

Identify the type of installation of the cover strips, according to the alignment of the deck boards.

Option 1: Installation of the composite wood fascia in the direction of the boards.

1. See Figure 3 in order to follow the expansion play.
2. The fascia must be installed as shown on diagram figure 11.

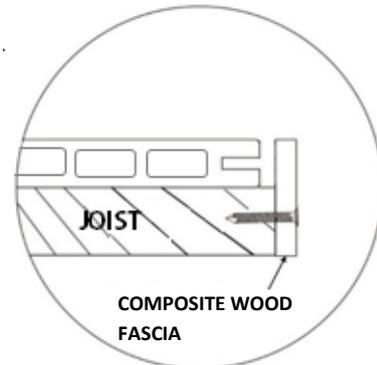


Figure 11

Option 2: Installation of the composite wood fascia perpendicular to the boards.

1. Due to the space at the end of the board, need a wooden block to place against the joist to maintain the space.
2. The fascia must be installed through the wooden wedge, see Figure 12.

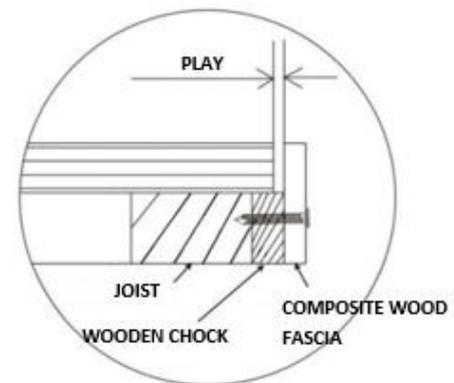


Figure 12

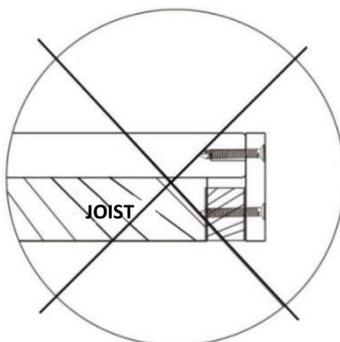


Figure 13

INSTALLATION OF ALUMINIUM FASCIA

To get a perfect finish, the aluminium fascia can be cut very easily lengthwise thanks to the different grooves spaced 5mm apart. It is enough with pliers to bend back and forth over the desired groove until it breaks.

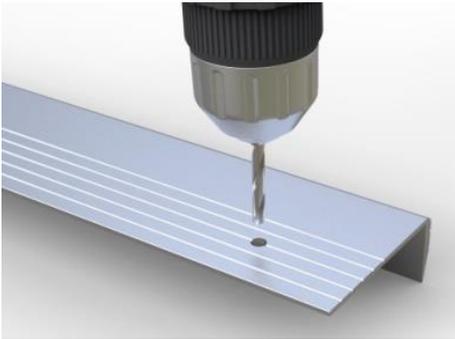
Identify the type of installation of the Universal aluminium fascia, according to the alignment of the decking boards.

Option 1: Installation perpendicular to the boards.

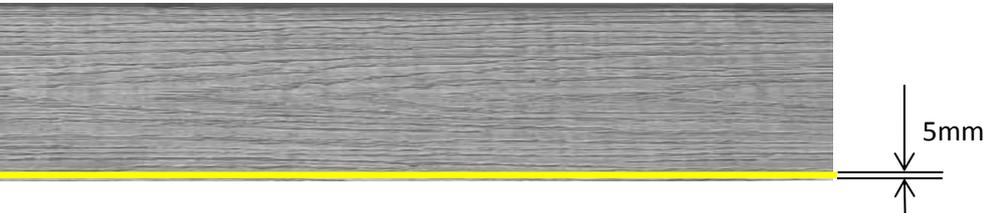
Step 1: Drill at \varnothing 3mm into the joist.



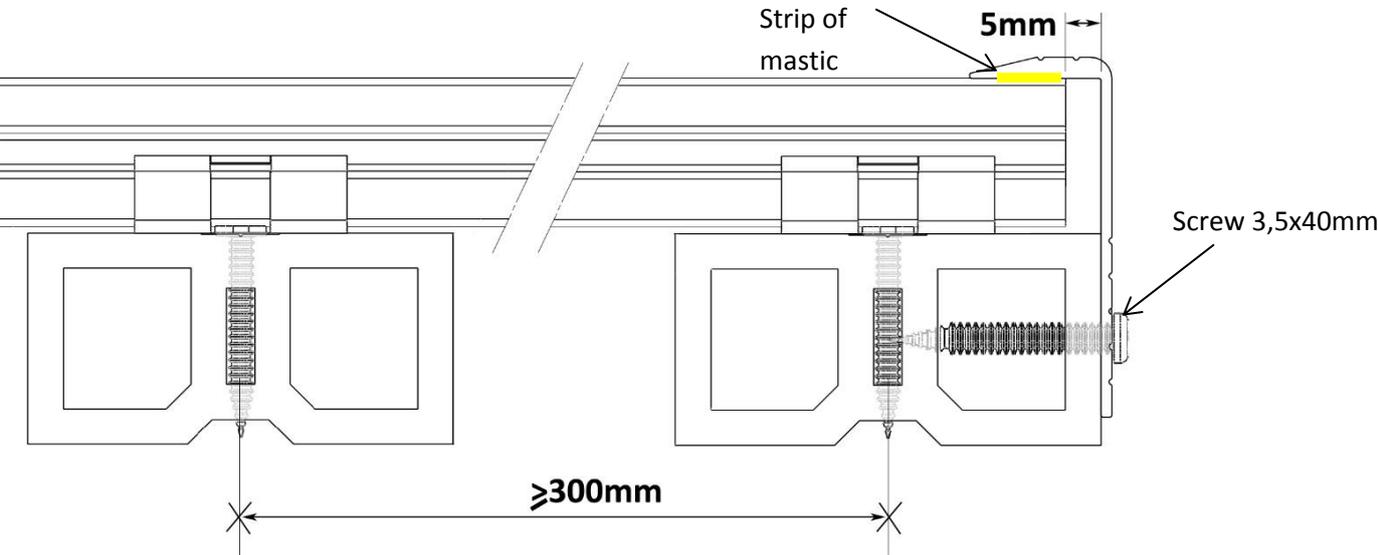
Step 2: Drill the fascia with an \varnothing 3,5mm drill bit



Step 3: For better support of the aluminum fascia on its support, you must apply a strip of PU mastic or adhesive mastic at the edge of the board about 5mm wide before installing and fixing the aluminum fascia.



Step 4: Fix the aluminum fascia on the joist with a round head crew 3.5x40mm

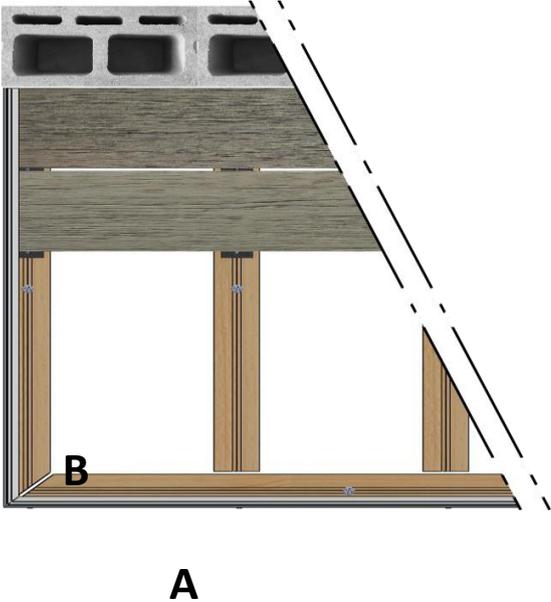


Option 2: Installation of the aluminium fascia in the board's direction.

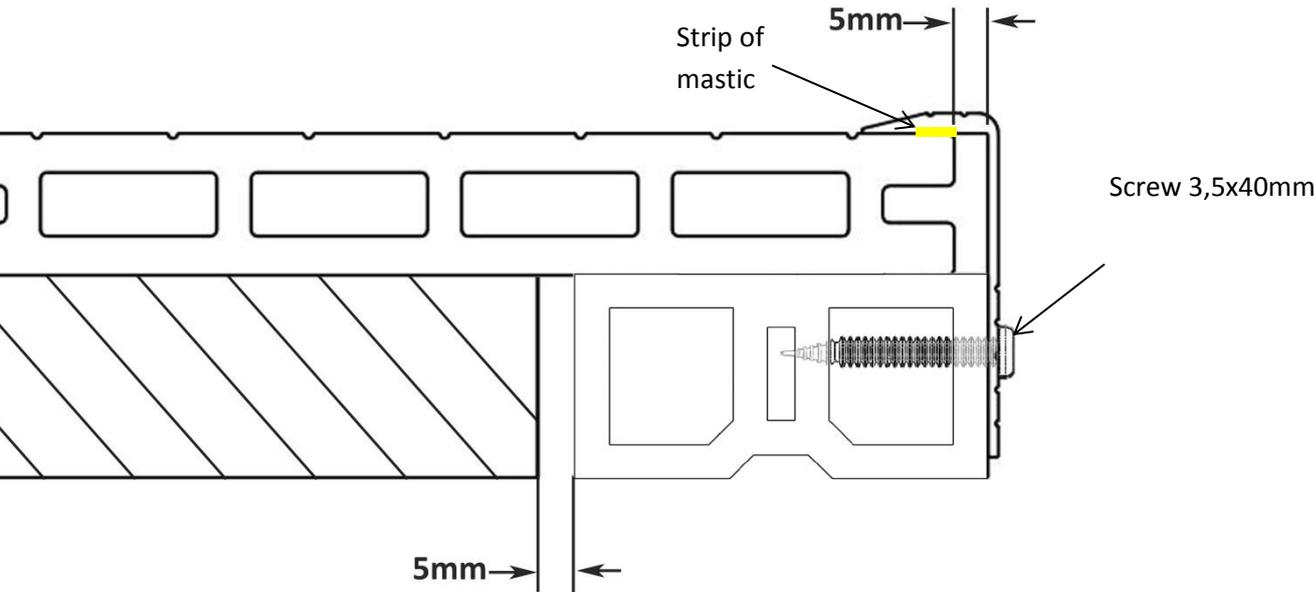
Step 1: A joist (A) must be positioned perpendicular to the end of the joists in order to follow the same procedure as for Option 1 installation.

The joists (A) and (B) must be cut at 45 ° and spaced 5mm apart.

The aluminum fascia must also be cut at 45 ° in the case of installation as below:



Step 2: Repeat steps of Option 1



INSTALLATION OF THE SILICON CAP FOR HOLLOW BOARDS

For an aesthetic finish like a solid board, for the finishing of stairs or difficult access, the silicone cap are perfectly suitable and are very simple to install.

There are 2 models of silicone cap, one for the JAZZ boards which exists in chestnut and anthracite grey and the other for the SWING boards in the 3 colors assorted to the boards, chestnut, anthracite grey and mineral.

For SWING boards:

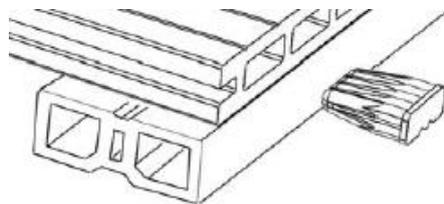


For JAZZ boards:

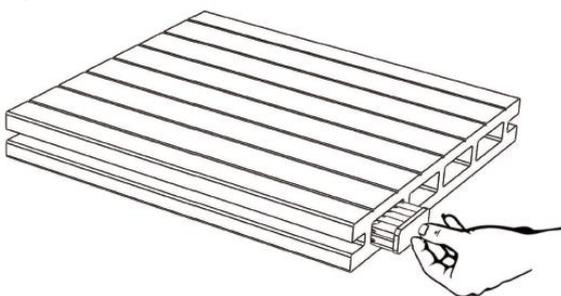


So first of all use the cap that matches your decking board for a perfect finish.

Once the caps in hands you will notice that these have 2 small perforations which allow the evacuation of the water which would possibly be in the alveoli of the boards because of condensation. It is therefore important to ensure that the openings in the caps are positioned in the boards downwards as indicated in the diagram below:



Finally, insert the caps into the alveoli until it reaches flush with the board as follows:



CLIPS CONFIGURATION

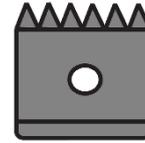
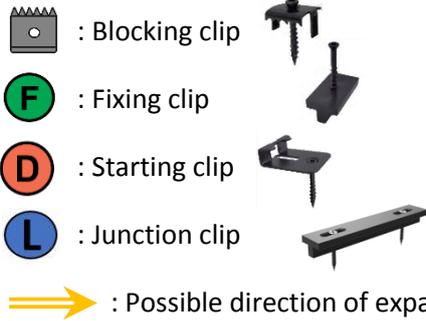


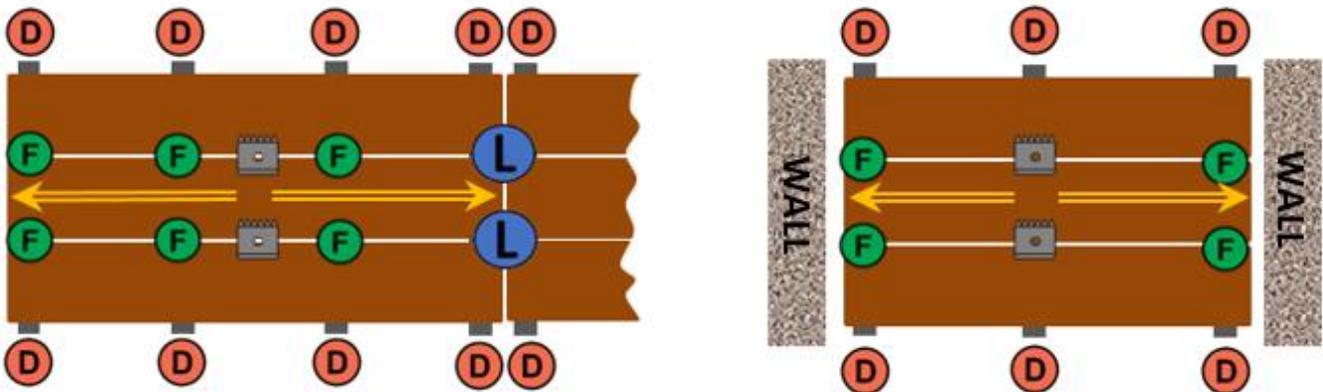
Figure 4 Blocking clip drawing

Note: Pre-drill the joists for best results. Never place 2 Blocking clips on a board.

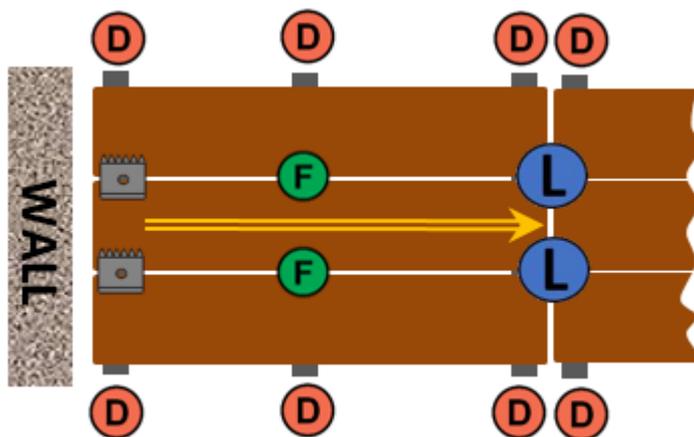
CLASSIC PATTERNS

→ *Single board installation :*

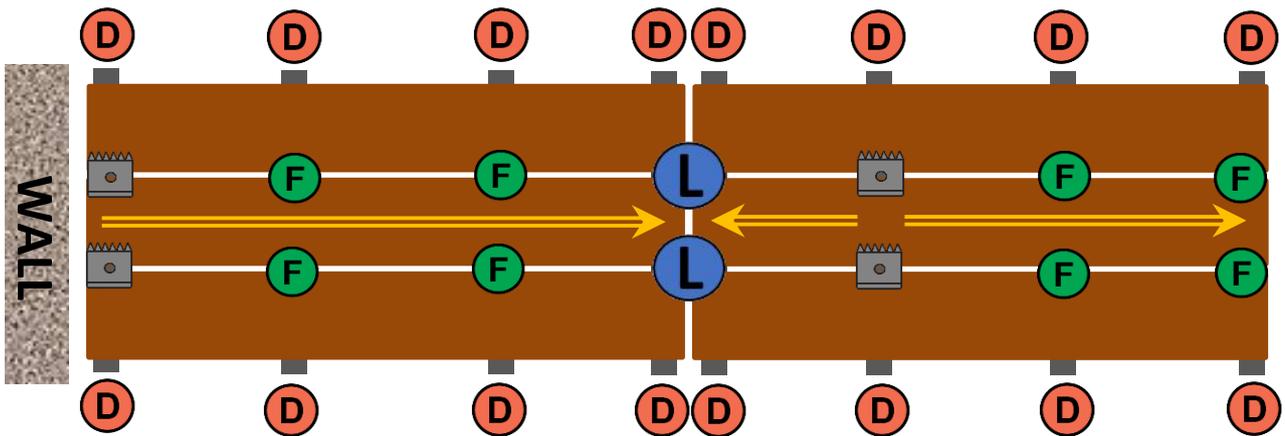
Case A: if there is no wall on each side or if there is a wall on each side, then place the locking clips in the middle of the blade.



Case B: if there is a wall only on one side, then the blocking clips must be placed closest to the wall.

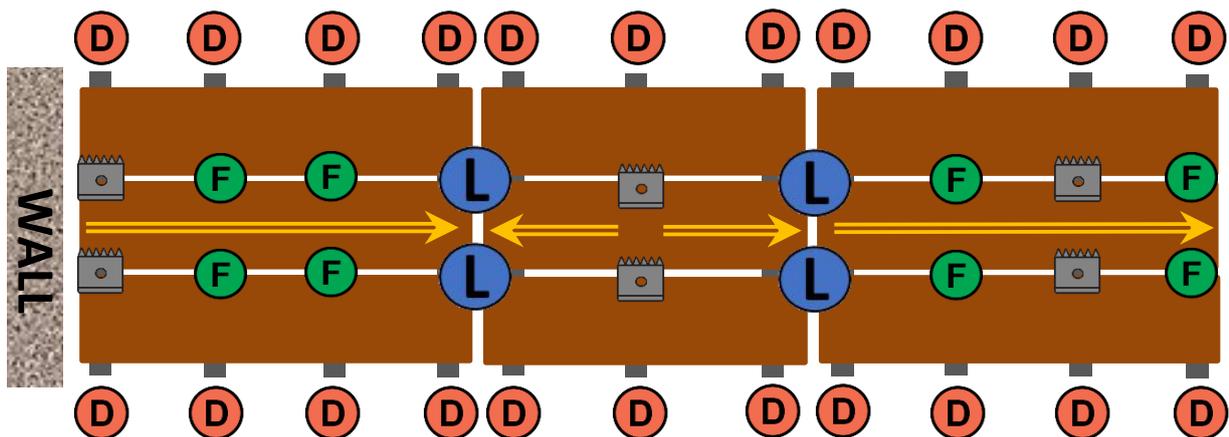


→ Two boards end to end installation:



→ 3 or more boards end to end installation:

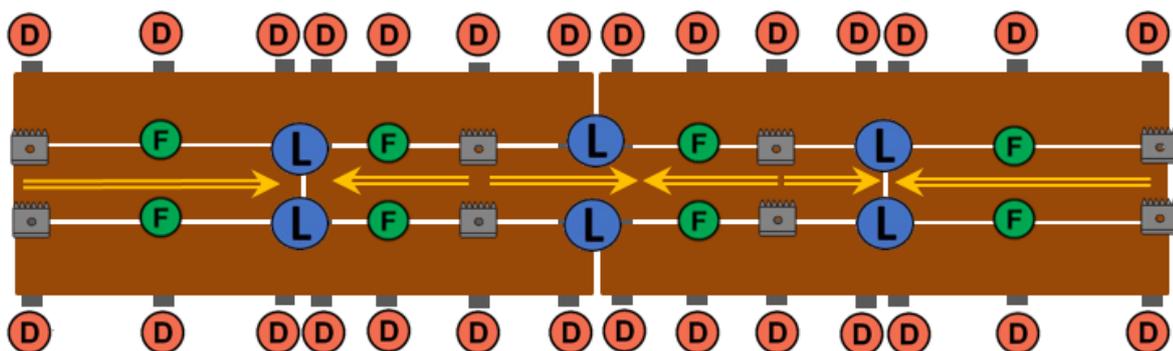
The middle boards should be as short as possible and **LESS THAN 2 meters**.



STAGGERED PATTERN

Important :

The installation of blocking clips on another rafter is prohibited.
The installation of blocking clips of several adjoining boards must be carried out in line on the same joist.



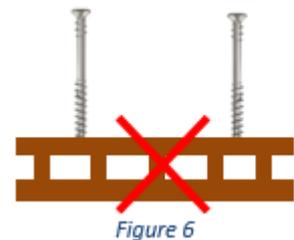
❖ DECKING MAINTENANCE

EXTRUBOIS composite wood materials are easy to maintain. It must be carried out regularly with clean water and soap to remove dirt, organic deposits, mold growth and any pollution that can be encrusted in the non-slip grooves of the boards and which could generate a phenomenon of slipperiness which can be particularly dangerous in the event of stagnant water.

Never let the stains get stuck. These must be quickly cleaned with diluted mild detergents. It is advised never to use pure bleach, solvents or concentrated or corrosive chemicals, which would exclude any guarantee.

❖ CANCELLATION OF THE WARRANTY

- The fixing of the deck boards screwed from above.
- Non-compliance with the spacing and installation instructions recommended in this technical guide.
- Longitudinal cutting of deck boards and joists.
- All maintenance faults



❖ OTHER USEFUL INFORMATION

- The EXTRUBOIS deck boards can in no case be used as an anchor for fixing tarpaulins, swimming pools, lampposts and posts for railings or fences.
- An expansion play must be arranged around the light spots and posts that would be located on the decking.

❖ GUARANTEE REFUND CONDITIONS

During the first 5 years following the purchase of EXTRUBOIS composite wood products, all defective products will be replaced by EXTRUBOIS composite wood products.

The sixth year, 80% of defective products.

The seventh year, 60% of defective products.

The eighth year, 50% of defective products.

In the ninth year, 30% of defective products.

The tenth year, 10% of defective products.

Beyond this 10-year period, the warranty is void. The supplier reserves the right to inspect the materials, to analyze the content of all points of each complaint.



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