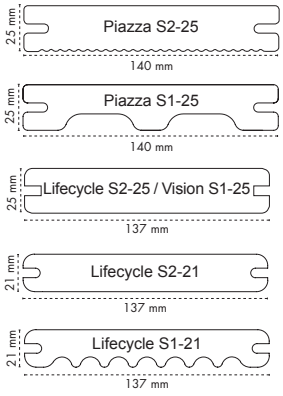
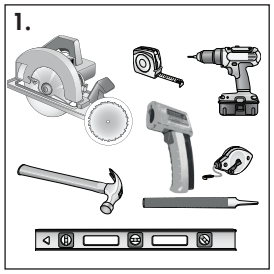
The Biofore Company UPM

Installation Instructions for **UPM** ProFi® Piazza, Lifecycle and Vision



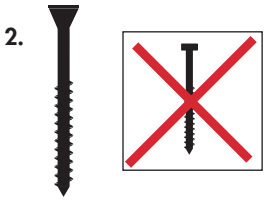
No special skills or tools are needed for installation. However, it is important to follow the instructions carefully. Failure to do so may lead to a reduced product performance and will invalidate the manufacturer's guarantee. If you are in doubt, please contact your UPM ProFi distributor's representative and / or visit www.upmprofi.com for further information.

Please ensure that you meet the requirements of the local building regulations. Note that transport related smudges or scratches on UPM ProFi Lifecycle boards are normal and do not affect the performance of the board. These marks will weather in the first months. Please be careful not to scratch new boards when using sharp edged tools or other implements during installation.



1. Tools

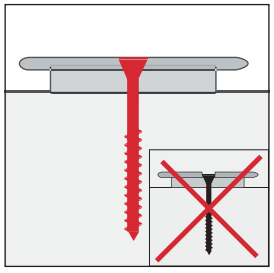
The following tools are recommended for building the deck: circular saw (carbide tipped fine cut blade is recommended), power screw driver, rubber mallet, spirit level, tape measure and an infrared thermometer. To avoid marking the boards, cutting lines should only be drawn with non-durable markers. As with any building project, proper eye, ear and lung protection equipment should be used. Always follow local building and safety codes.



2. Screws

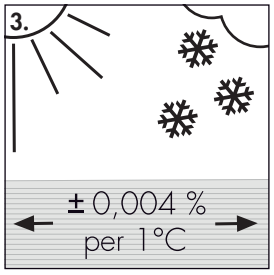
Use 4 x 40 mm A4 quality stainless steel countersunk head screws when using the Wing Clip or Classic Alu Rail for installation on UPM ProFi Support Rail or on timber joists. For an installation on UPM ProFi Alu Support Rail use 4 x 24 mm A4 quality stainless steel countersunk head screws. UPM ProFi Wing Clips are designed for screws with a head diameter of 5 to 6 mm. Use of other screws may lead to product failure and could invalidate the manufacturer's guarantee. A2 quality is sufficient for normal locations. A4 quality must be used where there is an increased risk of corrosion (E.g. near the sea or next to a swimming pool). Low-quality screws may cause stains on the deck.

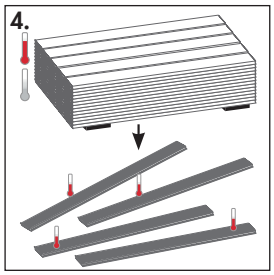
Please use the correct torque to ensure the screw head finishes level with the clip surface. Do not insert the screw too deep into the clip. This could damage the clip.



3. Thermal expansion gaps

Composite deck boards will expand and contract slightly along their length with changes in temperature. Boards installed during the early spring or winter, (i.e. when the boards are cold), will expand as the weather warms up. Expansion gaps must be left at the ends of the deck boards, whether it is where the ends of two boards meet, or where the end of a board is laid up to a wall or other fixed surface. (Please note the local building regulations, e.g. regarding the minimum distance of the decking to the wall of the building, and the possible need for drainage channels between house wall and decking edge. For ventilation purpose, the gap between house wall and decking needs to be minimum 20 mm, see also Chapter 5.). A detailed expansion table can be found on the Technical Data Sheet (downloadable from www.upmprofi.com).It is normal for the length of WPC deck boards to shorten approximately 1mm per 1 meter when they have cooled down following the first warm days after installation. Therefore a rough guide is to leave a 3 mm gap at the ends of 4 m long boards if installed at air temperatures equal to or below 20 °C (when temperature of the board is <= 20 °C) and leave no gap if the air temperature is above 20 °C (assuming board is hot > 40 °C), as boards installed in hot weather will contract when they cool. Use an infrared thermometer to measure the surface temperature during installation. The amount of expansion per degree change in temperature is proportional to the length of a board. Random staggering of joints as is often made with a timber deck is not recommended. The expansion gaps can form part of the deck design: see the reference photos on www.upmprofi.com.



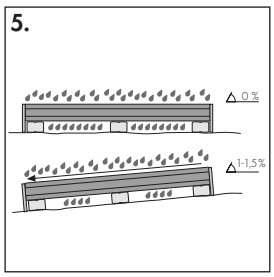


4. Equalising the boards temperature before cutting and installation

To ensure that all deck boards are at the same temperature when cutting and installing, it is important to spread the boards out before starting the installation. Make a cut to even each board end, because the board lengths may vary a few mm between each other. Cutting of the boards to length should ideally be done at the same time. If the boards are not at the same temperature when cut to length, they will end up at different lengths when the temperature has equalized. If allowed by local conditions, it is recommended to cut the boards after installation using a circular saw with guide rail. For perfect finishes we recommend to chamfer the cut edges of the boards.

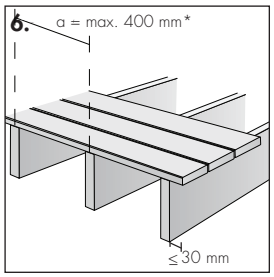
Note: *Mix boards from a single pack before installation to assure pleasing shade selection and dimensional tolerances of the boards. If you use more than one pack, also mix boards from each of them before installation.*

Due to production processes the UPM ProFi Piazza S1-25 decking boards may be curved. When lying on the ground the ends of a 4 metre board may be raised by a few cms. This has no influence on the properties of the boards or the possibilities of installation.

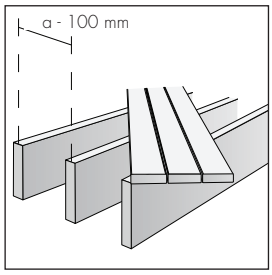


5. Inclination and ventilation

UPM ProFi Piazza, Lifecycle and Vision boards can be installed with no incline. However, installing the boards at a gradient (e.g. between 1 - 1,5 %) results in faster deck drying and the run-off rainwater will help to wash away dust. To ensure the ground has good drainage and the deck is well ventilated please observe normal terrace building procedure. This is specifically important if the planned deck is to have a closed surface by using either UPM ProFi Classic Alu Rail and/or the Rubber Strip. If the surface of the deck is to be closed, then ventilation points must be created to allow the deck to ventilate naturally. This is particularly relevant where decks are exposed to high humidity i.e. swimming pools, garden ponds or wet areas. If installing up to a wall or other fixed surface, please always leave a gap for ventilation of minimum 20 mm.



* max. spacing see table 1



6. Subconstruction

The substructure can be built using either UPM ProFi Support Rail or UPM ProFi Alu Support Rail Small or if structural joists are required you can select from timber joists or UPM ProFi Alu Support Rail Large. In either case the base on which they are installed should be flat, stable, and incorporate an incline to facilitate drainage. If timber joists are to be used, we recommend dried hardwood durability class 1 (for installation please note generally accepted codes of practice - particularly regarding water drain). Typical base types are concrete blocks, impacted stones, or concrete. UPM ProFi Support Rail and UPM ProFi Alu Support Rail Small must only be installed on hard flat surfaces (if using Rubber Pads in longitudinal direction underneath the maximum distance from center to center must not exceed 30 cm).

In any case, the subconstruction must be built as a rigid framework with cross-members. The maximum distance of cross-members must not exceed 2 m (centre to centre). The joists must be suitably anchored (not possible for roof terraces) e.g. by fixing the support rails with bolts into the concrete at intervals of 1 m to prevent movement of the deck during its lifetime. The joists should be parallel to the direction of drainage. When the UPM ProFi Rubber Pad or UPM ProFi Foot are used, they allow the joist to be used in either direction. Building regulations must be followed, and specialist advice should be sought for roof terraces and other raised decking.

Maximum joist spacing for different uses depending on the products can be found in the table 1 below. When laying the boards diagonally to the joists, the spacing has to be reduced by 10 cm. UPM ProFi boards must not be used above ground floor applications, unless built on a solid load bearing surface: e.g. a concrete balcony or roof terrace. Please note that the maximum recommended overhang of a board end is 30 mm.

Note: *If all boards of the terrace are being attached by direct screwing (only possible for UPM ProFi Lifecycle S2/S1, not recommended for aesthetic reasons) instead of using UPM ProFi Wing Clips, the substructure must be made of timber joists and high quality (minimum) 5 x 60 mm A4 or A2 stainless steel screws are needed.*

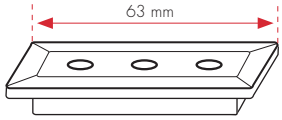
Table1:

Joist spacing (a)	Piazza S2-25	Piazza S1-25	Lifecycle S2-25/ Vision S1-25	Lifecycle S2-21	Lifecycle S1-21
Residental	40 cm	35 cm	45 cm*	40 cm*	35 cm*
Commercial	30 cm	-	40 cm*	30 cm*	-

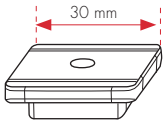
* Maximum allowable load 4,79 kN/m²

The one sided Piazza S1-25 and Lifecycle S1-21 are designed for residential use only.

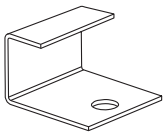
If two sided Piazza S2-25 / Lifecycle S2 boards should be installed in harsh environments (especially in hotter climates and areas with higher UV levels like high altitude locations) please visit www.upmprofi.com or contact your UPM ProFi distributor for further information.



Wing Clip Large**



Wing Clip Small 2.0



Classic Start Clip

**Please note that the Wing Clip Large does not work with Lifecycle S1-21 and Lifecycle S2-21

7. Fixing deck boards with UPM ProFi Wing Clip or Classic Alu Rail

UPM ProFi Piazza, Lifecycle and Vision boards with edge grooves allow the use of UPM ProFi Wing Clips for hidden fastening. The alternative fixing with UPM ProFi Classic Alu Rail provides a closed deck surface and creates a stronger structure for commercial applications. The boards can be cut and shaped in the same way and with the same tools as for timber decking.

Please check the S2 boards before installation and choose the side you prefer as top side.

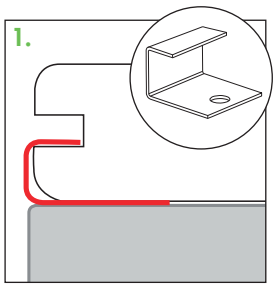
1. Attach UPM ProFi Classic Start Clips centrally onto the joists. If using UPM ProFi Alu Support Rail or timber joists, pre-drill using a 3 mm drill bit. Slide the first board groove into the start clip tab. Instead of using Start Clips, UPM ProFi Lifecycle may also be screwed directly into joists (see chapter 6). In both cases ensure that the first board is at right angle to the joists.

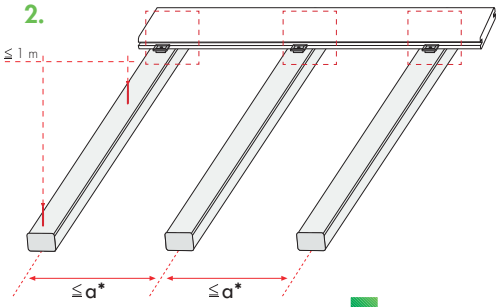
2. For UPM ProFi Piazza fix one screw directly through the bottom tongue at the middle of each deck board (pre-drilling recommended, ø 3mm). This single direct fixing of the deck board to the joist will ensure that the expansion and contraction can still occur at both ends, but that the board itself stays in place. Then slide the Wing Clips firmly into the groove of the first board above every supporting joist. Optionally use UPM ProFi Classic Alu Rail instead of Wing Clip fixing.

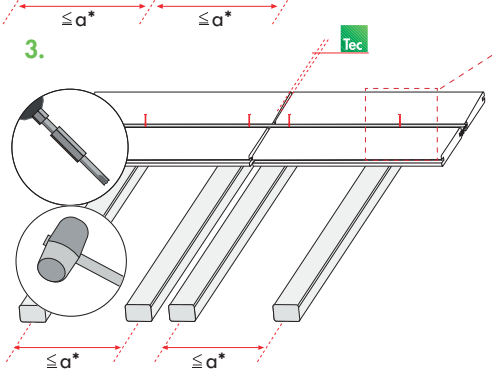
3. Take the next board and slide to the clip tabs, pressing it firmly into place.

4. Screw the clips/alu rail to the joists so that the screw head is even with the clip/alu rail surface. (more details chapter 2: Screws).

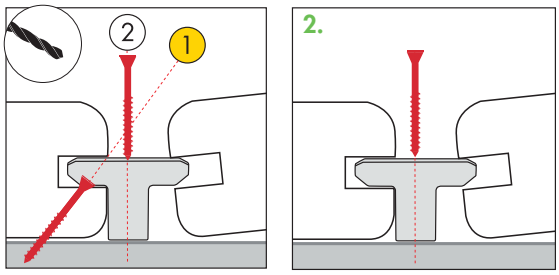
Note! If necessary use clamps or tension belts to get uniform gap sizes.

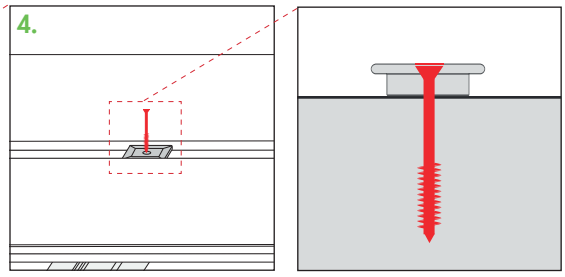




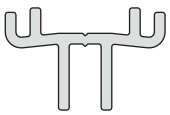


1 x in the middle of each Piazza board





Classic Alu Rail



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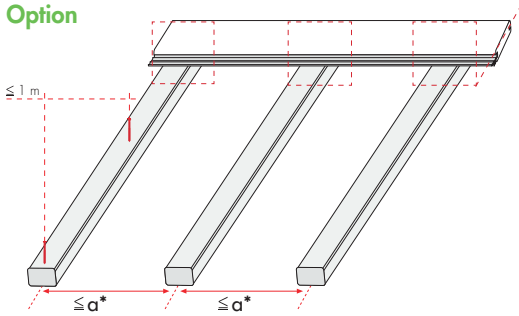
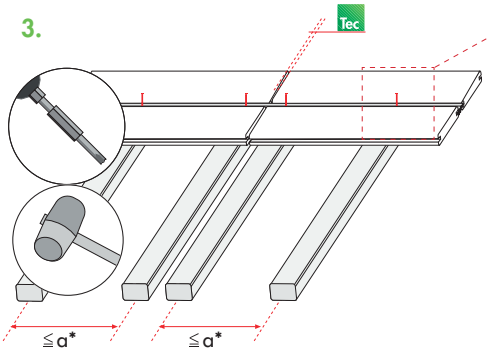
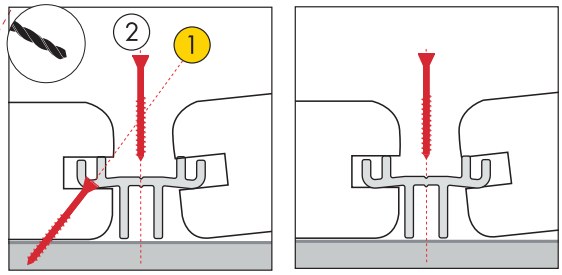
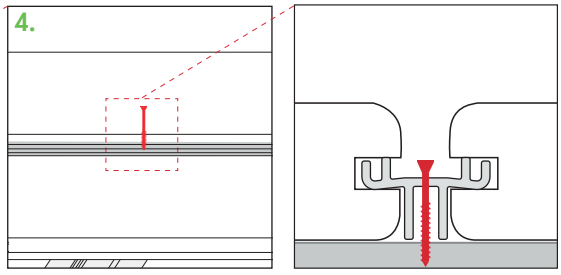


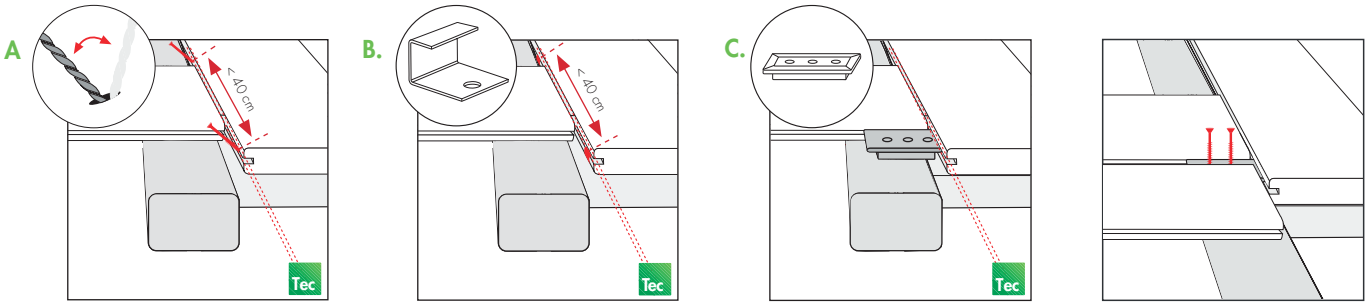


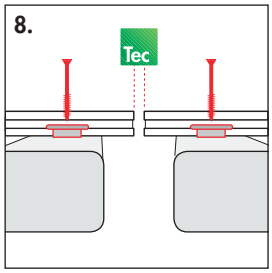
1 x in the middle of each Piazza board

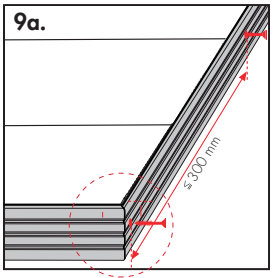


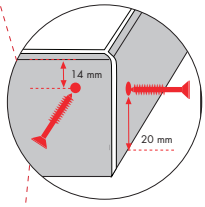


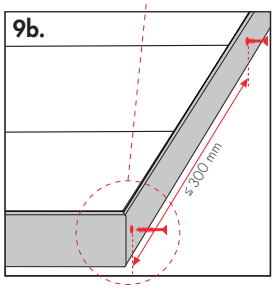
*Please note the different spacing for Piazza/Lifecycle/ Vision, see table 1, page 2











8. Joining ends of boards

Support both boards with their own joist (joists should be spaced at least 4 cm apart). Leave an expansion gap between the two boards (see chapter 3: Thermal expansion gaps). Fix each board end with a separate Wing Clip.

If installing standard 4 metre UPM ProFi Classic Alu Rail, 4 metre UPM ProFi boards should be used. Two support rails must be used where two boards meet, and the ends of the meeting Alu Rails must be fixed to each support rail. Expansion gaps between boards and the Alu Rails must be left as described above.

Please note that you should cut the UPM ProFi Alu Rail shorter than the deck boards it is joining together, (e.g. 3 mm shorter on each end for a 4 metre length) to ensure that the Alu Rail does not protrude from the end of the deck boards during colder months.

9. Finishing

a. To create perfect finish for the terrace UPM ProFi Piazza Cover Strips* can be fixed as illustrated. Please note expansion gaps (see chapter 3).

b. UPM ProFi Lifecycle and Vision boards can be cut lengthwise for use as fascia cover boards to enclose the substructure. For colour adjustments the cut edges could be carefully treated with a heat gun. Alternatively Lifecycle and Vision boards without edge grooves can be used (subject to availability).

The spacing between the screws should not exceed 300 mm. Allow a minimum 20 mm gap between the fascia and any vertical walls or the ground for drainage.

10. Installation of Rubber Strip

When installing the UPM ProFi Rubber Strip, please ensure that you do not pull the strip in length when inserting into the joint. Quite in contrary it is recommended to compress the Rubber Strip during installation and to overlap it at the edges a few centimetres. The strip should be cut adequately at the end of the installation when it has reached its original length. The use of Rubber Strip with UPM ProFi Lifecycle deck boards in thickness 21 mm (Lifecycle S1-21, Lifecycle S2-21) is only allowed in combination with the use of UPM ProFi Classic Alu Rail.

11. Cleaning and Maintenance

UPM ProFi Deck products have been designed with closed surfaces that offer greater resistance to spills and stains. However, as with any outdoor flooring surface, periodic cleaning and correct care is needed to ensure that the deck retains its beauty for many years. Please follow our Care and Maintenance instructions at www.upmprofi.com

*when available during 2018

UPM

www.upmprofi.com

www.upmprofi.com/wpc-installation

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