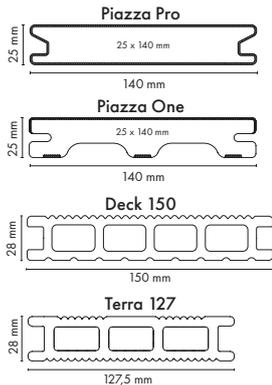
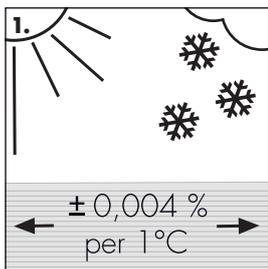


Installation Instructions for UPM ProFi Piazza, Deck 150 and Terra 127



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. Please be careful not to scratch new boards when using sharp edged tools or other implements during installation.

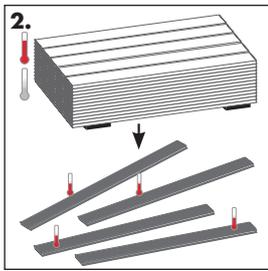


1. Thermal expansion gaps

Composite deck boards will expand and contract slightly along their length with changes in temperature. UPM ProFi Deck boards installed during the early spring or winter (when the boards are cold), will expand as the weather warms up. Expansion gaps must be considered 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 and the generally accepted practise, 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, see also chapter 3. 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 1 mm 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 > 20 °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. Butt joints should be avoided in extreme environments with very strong differences in temperature. The expansion gaps can be made into part of the deck design: see the reference photos on www.upmprofi.com.

Random staggering of joints, as is often made with a timber deck, is not recommended, as it might lead to unequal expansion gaps. Note, that each deck board end must be supported with its own joist.

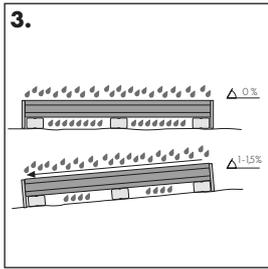


2. Before cutting and installation: Batch control and equalising the board temperature

Before starting the installation different batches of deck boards need to be checked on possible colour variations. If in doubt please contact your local dealer before starting. 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 rectangular cut to even each board end. 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.

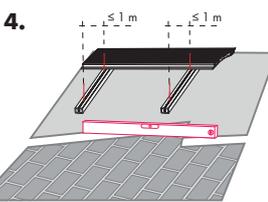
Note: Always mix boards from the pallet/pallets before installation.

Before installation, the ends of UPM ProFi Piazza One deck boards may rise slightly due to warming of the high performance polymer shell. This has no effect on the deck properties and the boards automatically become flat again with installation.



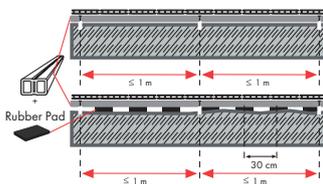
3. Inclination & Ventilation

As UPM ProFi deck products have a very low rate of moisture absorption, they can be installed horizontally with no incline. However, installing the boards at a gradient (e.g. 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 Alu Rail and/or Rubber Strip. When 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 (30 mm if the deck is entirely surrounded by walls or fixed surfaces).

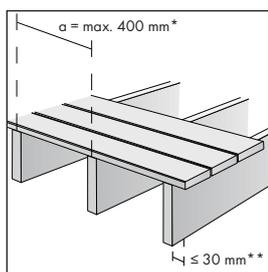


4. Subconstruction

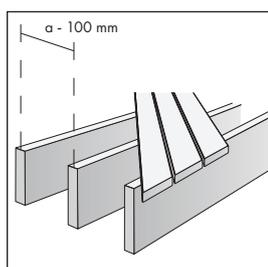
UPM ProFi deck boards have high impact resistance even during cold winters. However, the boards are more flexible than timber. Therefore the joist spacing of the subconstruction for the different products and uses is limited (see Table 1). UPM ProFi Support Rail or UPM ProFi Alu Support Rail Small must only be installed on flat, permanently load bearing surfaces (if using Rubber Pads in longitudinal direction underneath the maximum distance from center to center must not exceed 30 cm). Any raised deck must be built on Alu Support Rail Large or timber frame. UPM ProFi deck 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. Typical base types are concrete blocks, impacted stones, or concrete. Typical base types are concrete blocks, impact stones, or concrete.



In any case, the subconstruction must be built as a rigid framework with cross-members (see picture 10). The maximum distance of cross-members must not exceed 2 m (centre to centre). The joists must be suitably anchored 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 (not possible for roof terraces). Butt joints must be covered by deck boards and connected with each other. 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 etc.). If Alu Support Rail Large is used in combination with adjustable feet, cross-members must be screwed to the feet. Building regulations must be followed, and specialist advice should be sought for roof terraces and other raised decking.



* max. spacing see table 1
**except for Piazza One



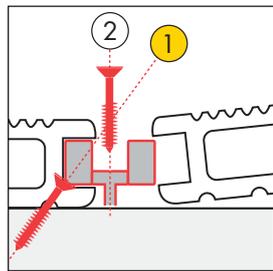
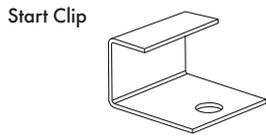
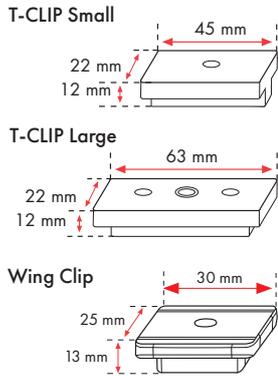
Maximum joist spacing for different uses depending on the products can be found in the table 1 below. When laying the boards diagonally to the joists, the spacing has to be reduced by 10 cm. For Piazza Pro, Deck 150 and Terra 127 the maximum recommended overhang of a board end is 30 mm. For Piazza One, it is important that each board end is supported by a joist or support rail with no overhang: if composite support rails are used, they must be fixed to the ground. Failure to do so may result in the board ends rising slightly during the winter. They will normally become flat again when the deck warms up..



Table 1:

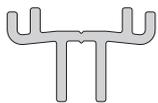
Joist spacing (a)	Piazza PRO	Piazza ONE	Deck 150	Terra 127
Residential	40 cm	35 cm	40 cm	35 cm
Commercial	30 cm	-	40 cm	-

Piazza One and Terra 127 are designed for residential use only.

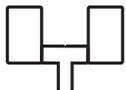


! 1 x in the middle of each board

Alu Rail for Piazza One



Alu Rail for Deck 150



5. Fixing deck boards with UPM ProFi Clips or Alu Rail

UPM ProFi deck boards with edge grooves allow the use of UPM ProFi Clips for hidden fastening. Make sure to select the correct clip, matching the deck board (see table 2). The alternative fixing with UPM ProFi Alu Rail provides a closed deck surface and creates a stronger structure for commercial applications (with Deck 150 only). The boards can be cut and shaped in the same way and with the same tools as for timber decking.

! Table2:

Fixing options	Piazza One	Piazza Pro	Deck 150	Terra 127
Clips	Wing Clip	T-Clip	T-Clip	T-Clip
Alu Rail	Alu Rail for Piazza One	-	Alu Rail for Deck 150	-

1. Attach UPM ProFi Start Clip 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. Ensure that the first board is at right angle to the joists.

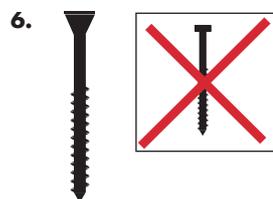
2. It is mandatory to fix one screw directly through the bottom tongue at the middle of each deck board (for Piazza One pre-drilling recommended, \varnothing 3mm). This single direct fixing of the deck board to the joist will ensure that the expansion and contraction can still occur at both ends, but that the board itself stays in place. The fixing screws of the different boards in a row should be screwed into the same support rail. Note: Forgotten direct fixing may lead to movement of the deck boards and unequal gaps.

3. a) Piazza One: Slide the clips firmly into the groove of the first board above every supporting joist. Optionally use alu rail instead of clip fixing. Take the next board and slide to the clip tabs, pressing it firmly into place. Screw the clips/alu rail to the joists so that the screw head is even with the clip/alu rail surface.

3. b) Piazza Pro, Deck 150 and Terra 127: Slide the T-Clips firmly into the groove of the first board above every supporting joist and screw it so that the screw head is even with the clip. Optionally use alu rail instead of wing clip fixing. Take the next board and slide to the clip tabs, pressing it firmly into place.

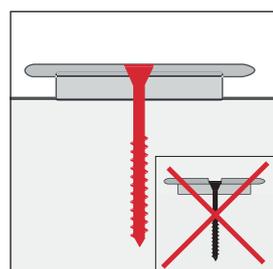
Warmer climates (south of 43rd latitude northern hemisphere) require installation with alu rail only to avoid the deck boards bending excessively when hot (allowed for UPM ProFi Deck 150 only).

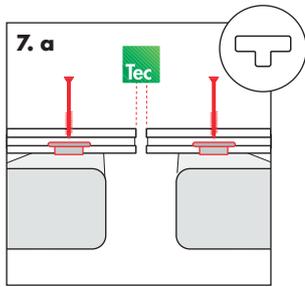
Note! For Piazza One it may be necessary to use clamps to ensure perfectly uniform gaps between long edges of boards.



6. Screws

UPM ProFi A4 4x40 mm stainless steel screws must be used for fixing UPM ProFi Clips or alu rail. On UPM ProFi Alu Support Rail Small/Large the deck boards must be fixed with UPM ProFi A4 4x24 mm / A2 3,9 x 22 mm screws. Please use the correct torque and tool speed (max. 500 RPM) to ensure the screw head finishes level with the clip surface. Do not insert the screw too deep into the clip. Note: If needed, additional UPM ProFi screws for direct fixing or T-Clip Large installation can be purchased separately. Use of other screws may lead to product failure and could invalidate the manufacturer's guarantee. Low-quality screws may cause stains on the deck.



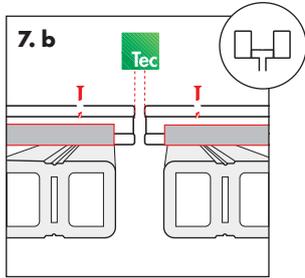


7. Joining ends of boards

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

If installing standard 4 metre UPM ProFi Alu Rail, 4 metre UPM ProFi deck 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. When additionally using UPM ProFi End Caps (only for Deck 150), the alu rail always must be cut 10 mm shorter, no matter of what length the deck board is.



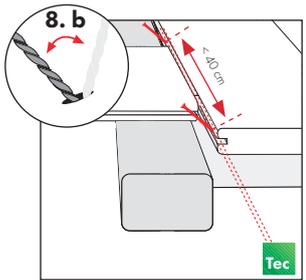
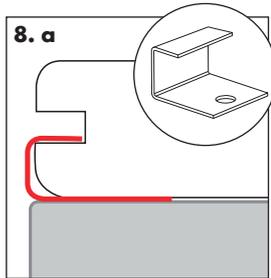
8. Fixing first / last deck boards

a) With UPM ProFi Start Clip

First attach one start clip onto each UPM ProFi Support Rail or joist. Then slide the first row of deck boards into the start clip tab and continue installation according to the instructions above. Before attaching the last row of boards of the terrace, first screw the start clips onto the allocated place of the joists ends. Then slide the last board into the start clips.

b) Without UPM ProFi Start Clip

If no start clips are being used at the edges of the deck, oval holes must be drilled through the bottom tongue of the outer edge of the deck board. The board is then screwed directly to the support rails through these holes. The holes can be made oval by moving a 4 mm drill bit from side to side. Do not tighten the screws too much. The boards must have room to expand and contract according to the outside temperature, so the screw should move freely within the oval hole.



9. Finishing

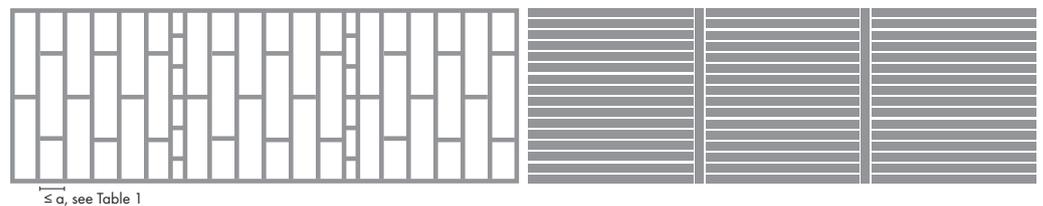
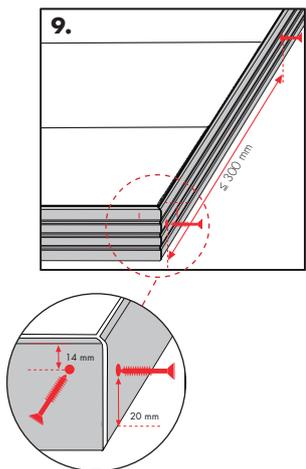
To create a perfect finish for the terrace UPM ProFi Cover Strips can be fixed as illustrated. Please note expansion gaps (see chapter 1).

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

10. Optimizing expansion gaps

In larger decks, where 4 m or longer boards are laid end to end, the following tips will help optimize expansion gaps:

- Be sure to build a subconstruction as a rigid framework with cross-members.
- Be sure to follow the thermal expansion guideline described in chapter 1 of this guide.
- Plan your deck so as to minimize the number of board-end joints / expansion gaps (e.g. by changing the board direction or using a framing board running at a 90° angle to the main area).
- As a last resort it is also possible to place the direct fixing screw at the end of a board. This will force the expansion/contraction to the other end of the board. Sufficient space must be left at the other end: the wider gap may be concealed by UPM ProFi Cover Strip.
- The larger the deck size, the bigger the distance of the deck up to a wall or other fixed surface must be kept.



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 Cleaning, Maintenance and Use Instructions at www.upmprofi.com

