INSTALLATION INSTRUCTIONS 2017
Version 03/2017

No warranty in case of non-compliance

Up-to-date installation instructions and drawings: www.werzalit.com
Installed coverage incl. approx. 4 mm joint = 443 mm, corresponds to approx. 0.1966 m²

Additional accessories (for covering joints and edges)
Aluminium cover angle, length 4 m
Aluminium wall connection profile, length 4 m
Aluminium end strip, length 2 m
Aluminium joint cover profile, 2-part, length 4 m
Aluminium edge cover profile, 2-part, length 4 m

Screws (stainless steel A2)
for aluminium SF profile
Pan head self-drilling screw 3.9 x 32
Countersunk self-drilling screw 4.8 x 50
for aluminium joint and edge cover profile
Countersunk sheet metal screw 4.2 x 50
Important Installation Information

1. General information

1.1 Applicability/questions?
The information in these installation instructions is based on standard laying situations. Due to the endless diversity of possible floor layouts and terrace sizes, not every single application can be addressed with these installation instructions.

We would be happy to prepare detailed laying recommendations for specific floor layouts or deviating design structures. For large structures with areas with side lengths larger than 8 m (see also page 6, section 6.2) please also contact our Building Service department, email: objektservice@werzalit.de

These installation instructions may be changed at any time without prior notice as a result of technical advancements. The most recent version is always available on the Internet (www.werzalit.com). Please absolutely follow the instructions since no warranty can be provided in the event of deviation from these installation instructions.

1.2 Areas of application

As flooring on garden terraces, roof terraces, garden paths, concrete balconies, carport floors, swimming pool deck, etc.

For applications that require approval by building authorities, a load-bearing, closed substructure with sufficiently calculated dimensions is required as a base for the terraza tiles or the aluminium sub-framework profiles.

1.3 Laying variations

The terraza tiles can be laid in many variations: e.g. chequered pattern or with a single groove direction, half-offset or both mixed together. Naturally, various colours can be mixed together in any combination. For half-offset installation, the edge tiles of each second row must be cut in half.

1.4 Processing

The terraza tiles, aluminium sub-framework profile, etc. can be sawn, milled or drilled with all typical woodworking tools.

1.5 Disposal

Scraps (cutting waste) can be disposed of as household or commercial waste. Larger quantities should be disposed of as bulky refuse or at a recycling centre.

1.6 Changes in colour

The terraza tiles are dye penetrated and fade naturally over the course of time without losing the basic character of their colour.

As these are wood-based products, colour variations over time, caused by UV rays and moisture, are natural and to be expected. During the first weeks and months in particular (depending on weather conditions), a change in colour of the tiles may occur, but this does not indicate a defect. Colour fluctuations within a tile or a batch highlight the natural character of wood and do not represent a defect.

1.7 Cleaning / care

The terraza tiles require no special care. However, larger instances of soil must be cleaned off shortly after they occur. To prevent algae and bacteria growth, we recommend regularly removing dirt and natural residues at least once per year.

To do this, brush off the terraza tiles lengthwise with water and typical household detergents using a normal household cleaning tool. For stubborn dirt, a high-pressure cleaner may be used (max. 80 bar, at least 20 cm distance from tile surface, no rotary nozzle).

Spots and stains of oil, grease, mustard, etc. can be removed with the following products (for example):  
- stain removal spray  
- power grease remover for grease and burnt fat  
- multi-purpose cleaner

Using a brush can also be very helpful. Afterwards, rinse off the tiles well with a large quantity of water.

2. Planning principles / installation information

2.1 Expansion in general

Temperature and moisture fluctuations cause the terraza tiles to expand and shrink in every direction. See Figure 1

The tiles expand by max. 6 mm/linear m of surface length or surface width. This must be taken into account during laying by leaving corresponding expansion joints of 3 mm/linear m on all sides (even for separations between sub-areas, see section 7.2). Failure to leave expansion joints can result in stresses that could lead to warping or buckling of the flooring.

2.2 Ventilation

The entire terrace structure must have good back ventilation. In order to ensure unhindered air circulation, the open space between and beneath the sub-framework elements may not be filled.

For terrace surfaces situated at ground level, a border of paving blocks or the like should be provided as separation from the turf or soil. A direct connection between the terrace surfaces and turf or soil should absolutely be avoided.

2.3 Surface drainage

Drainage of the tile surface takes place via the open click joints created by connecting the individual terraza tiles together. A grade in the tile surface is useful but not absolutely necessary since the terraza tiles bow up slightly in the middle, causing any precipitation water to flow into the click joints, which divert it onto the foundation.

However, it is essential to ensure sufficient drainage of the foundation (for concrete floors, foundation with sealing layers, etc.). See also page 3, section 2

2.4 Laying as floating floor

To ensure expansion of the surface free of resistance, the sub-framework must in principle be laid as a floating floor (no fixed fastening to the foundation).

![Figure 1](image1.png)

**Figure 1** Calculation of the expansion joint with 3 mm/linear m per side

![Figure 2](image2.png)

**Figure 2** 3 mm/linear m on each side, but at least 20 mm
3. Foundation properties

A sufficiently load-bearing, consolidated foundation of ballast, chippings or the equivalent is required and must be deep enough to prevent frost exposure. **Sufficient drainage must be provided to prevent pooling of moisture; if necessary, a drain should be installed.** For closed surfaces (e.g. concrete floors, on roof sheeting, etc.), a sufficient grade and sufficiently dimensioned floor drains must be provided. **Pooling of moisture under the tile surface must absolutely be avoided.**

3.1 Natural ground (soil)

In case of unconsolidated ground, the soil should be dug out accordingly. Then stones or the like should be poured in, covered with an approx. 5 cm layer of gravel bed and spread level. Finally, concrete paving slabs of approx. 20 x 20 x 4 cm should be laid as a base for the aluminium sub-framework profiles.  

The minimum total height from the top edge of the gravel bed is about 100 mm when using aluminium sub-framework profiles.

**Tip:** To avoid weed growth, water permeable sheeting (weed control fabric) can be incorporated, if necessary.

3.2 Concrete floors (poured concrete slab)

The concrete floor must be sufficiently load-bearing and must have the necessary grade to prevent the pooling of moisture. The aluminium sub-framework profile are laid on the bare concrete slab with rubber pads 100 x 100 x 5 mm placed underneath them to allow water arising on their undersides to flow away unhindered.

The minimum total height from the top edge of the concrete slab is about 65 mm when using aluminium sub-framework profiles.  

**See also section 4.2**  

3.3 Roof terraces and concrete balconies with top-side sealing layer (bitumen sheeting, etc.)

To protect the sealing layer against mechanical damage, to compensate for unevenness and to ensure water drainage underneath the surface, rubber pads of 100 x 100 x 5 mm must be placed underneath the aluminium sub-framework profiles. It is not necessary to lay out protective matting over the entire surface.

The minimum total height from the top edge of the seal layer is about 65 mm when using aluminium sub-framework profiles.

**Alternative:** To compensate for unevenness and inclines, height-adjustable and levelable paving support pads can also be used as a base for the substructure. **The aluminium sub-framework profiles must be fastened to the paving support pads.**

3.4 Stilt mount

The aluminium sub-framework has to be screwed together with the stilt-mounts.  

Stilt mounts (e.g. from Terracon or Beko) are available at building retail stores.

**See figures 25 and 26**

---

**Figure 25**

**Figure 26**

max. 500
4. Laying of the sub-framework

The aluminium sub-framework profile must in principle be laid out flat and must always have point-like support (e.g. on concrete paving slabs, rubber pads, paving support pads, etc., see also section 3) to avoid pooling of moisture. Direct laying in soil, on the gravel bed or on the concrete floor or the like is not permitted.

Longitudinal joints of the sub-framework must have at least a 20 mm expansion joint and must be arranged with offset surfaces. Sub-framework connections to all fixed borders must also have an expansion joint of at least 20 mm.

4.1 Laying spacing

The laying spacing \( X \) for the aluminium sub-framework profiles corresponds to the coverage width of the terraza tile:

\[
X = \text{exactly } 443 \text{ mm (centre-to-centre or in-to-out measurement)}
\]

☛ see Figures 3 and 4

**Exception:** For the narrower edge tiles, the spacing for the two outermost aluminium sub-framework profiles changes according to the width of the cut edge tiles.

☛ see page 5, section 5.3

Cut edge tiles must also be supported in the centre of the tile by an additional sub-framework.

The support spacing \( Y \) for the sub-framework (clear distance between support points) is:

\[
Y = \text{max. } 400 \text{ mm}
\]

☛ see Figures 3 and 4

4.2 Exception for \( X \) and \( Y \):

For high loads, e.g. carport floors, the laying spacing \( X \) and the support spacing \( Y \) for the sub-framework must be halved.

5. Laying the tiles on a sub-framework

Very important:
- Every tile must always lie with two outer edges against the aluminium sub-framework profiles.
- Screw each tile to 2 neighbouring sub-framework profiles at a minimum of 3 installation clips.
- If the screw connection is not executed properly, the tiles will not be sufficiently secured to each other and the joints may spread apart.
- In order to achieve the proper screw connection between the tiles, it is essential to strictly comply with the specified installation order.
- Corner tiles and cut edge tiles may also need to be secured by additional, visible screws.
- All screws should only be tightened until the screw head rests against the clip strip!

5.1 Laying direction

The terraza tiles must be laid in the installation order shown in Figure 6 (for laying with a half-offset, see Figure 7). The laying direction depends on which side the surface to be installed will be seen from, the direction in which the sub-framework will be laid and the direction in which the work will proceed.

**Rule of thumb:**
- If the sub-framework runs perpendicular to the perspective of the observer, then the installation direction of the tiles should always be from right to left and forward.
- If the sub-framework runs parallel to the perspective of the observer, then the installation direction of the tiles should always be from left to right and forward.

Any other installation order will make it impossible to achieve a screw connection through 3 installation clips on 2 neighbouring sub-frameworks.
5.2 Laying the first row of tiles
Tip: For flush alignment, it is recommended that a temporary guide bar be screwed to the sub-framework along which the first row of tiles will be laid. Another support bar at the other end stabilises the sub-framework.
1. Align the tile ➀ and screw it to 2 sub-frameworks at 3 installation clips using aluminium sub-framework profiles, pan head self-drilling screws 3.9 x 32 mm. Also visibly affix it with an aluminium sub-framework profile, a countersunk self-drilling screw 4.8 x 50 mm at the outer edge in the countersunk hole Ø 4 mm. ☚ see Figure 8
2. Place tile ➋ against tile ➀ at an angle, sliding the installation clips under the edge, press down and affix with screws at the 3 installation clips. Affix each additional tile (➃, ➄, ➋, … etc.) in the same way. ☚ see Figures 9 and 10

5.3 Laying additional tile rows
1. Place tile ➀ of each subsequent row against tile ➀ of the previous row at an angle, press down and screw in.
2. Each additional tile (➋, ➃, ➄, etc.) must first be positioned at an angle to the previous tile of the same row so that it just fits onto the installation clips of the previous row when pressed down. ☚ see Figure 11, section A

This process is continued row by row.

6. Expansion joints
6.1 Areas with side length less than 8 m
For areas with a side length smaller than 8 m, the expansion or edge joints against all fixed borders (e.g. house walls, shafts, garden walls, paving block borders, posts, rain pipes, etc.) must be at least 20 mm. ☚ see Figure 13

The edge joints can be covered with the aluminium wall connection profile and the aluminium cover angle, if necessary. ☚ see Wall connection section 7.3

6.2 Areas with side length larger than 8 m
Terrace surfaces with a side length larger than 8 m must be divided into sub-areas with consistent separating joints. ☚ see Figure 14
The separating joints can be covered with the 2-part aluminium joint cover profile, if necessary. ☚ see Joint covering section 7.2
Appropriately large edge joints must be created against all fixed borders. ☚ see also section 6.1

The edge joints against fixed borders can be covered with the aluminium wall connection profile and the aluminium cover angle, if necessary. ☚ see Wall connection section 7.3

At open terminations, the 2-part aluminium edge cover profile can be used as an alternative. ☚ see Edge covering section 7.1

For terrace surfaces that enclose a building (L- or U-shaped layouts), the surfaces in the corner areas of the building must also be separated. If necessary, please contact our Building Service department, email: objektservice@werzalit.de
7. Edge and joint coverings

7.1 Edge covering with the 2-part aluminium edge cover profile
Edge coverings can be created using the 2-part aluminium edge cover profile. In this case, it is essential to consider the required expansion of the terrace surface toward the edge. See Figure 15

Installation process:
The base profile is placed atop rubber pads with a spacing of about 50 cm and is screwed to the foundation (concrete paving slabs, concrete floor, etc.) with customer-provided anchors and stainless steel screws. After installation of the terrace surfaces, the cover profile is inserted into the guide groove of the base profile and secured with stainless steel countersunk sheet metal screws 4.2 x 50 mm from the WERZALIT product selection. See Figure 16 and detail image

7.2 Joint covering with the 2-part aluminium joint cover profile
Separating and expansion joints for sub-areas with a side length of up to max. 6 m can be covered with the 2-part aluminium joint cover profile. This requires a joint size of at least 55 mm in accordance with the width of the base profile. See Figure 17

Installation process:
The base profile must be centred to the joint such that uniform expansion of both sub-areas toward the joint is ensured. Rubber pads must be laid under the base profile at a spacing of approx. 50 cm.
The base profile must be screwed into the foundation (concrete paving slabs, concrete floor, etc.) at each support point with customer-provided anchors and stainless steel screws. The fastening screws should be set left and right of the guide groove of the base profile, in alternation.
After installation of the terrace surfaces, the cover profile is inserted into the guide groove of the base profile and secured with stainless steel countersunk sheet metal screws 4.2 x 50 mm from the WERZALIT product selection. See Figure 18 and detail image

7.3 Wall connection
For a clean wall connection, the aluminium wall connection profile can be used together with the aluminium cover angle. This wall connection allows expansion of the terrace surface while also covering joints. Ventilation of the sub-framework is also ensured by the holes punched in the aluminium wall connection profile. See Figures 19 and 20

Fastening process:
1. The aluminium wall connection profile is mounted to the house wall with its top edge at the level of the planned terrace surface (top edge of finished terrace floor). The fastening materials should be selected based on the wall material. Important: The option of fastening to the existing house wall using screws must be checked before installation.
2. The terrace surface is then installed with the required joint spacing. This wall connection permits an edge joint of max. 30 mm.
3. After installation of the terrace surface, the aluminium cover angle is clipped into the aluminium wall connection profile (like a zipper). If necessary, a lubricant can be used to facilitate clipping in the aluminium cover angle. An expansion joint of at least 5 mm must be maintained at the longitudinal joints.
7.4 Edge covering with aluminium cover angle
In applications in which the 2-part aluminium edge cover profile cannot be used, the aluminium cover angle can be used. The cover angle is fastened to the terraza tiles approx. every 50 cm with the stainless steel countersunk screws 3.5 x 30 mm from the WERZALIT product selection.

An expansion joint of at least 5 mm must be maintained at longitudinal and mitre joints. The max. length of the aluminium cover angle should not exceed 2 m.

Figure 21

7.5 Joint covering with aluminium end strip
In applications in which the 2-part aluminium joint cover profile cannot be used, the aluminium end strip can be used. The end strip is fastened to the terraza tiles on one side approx. every 50 cm with the stainless steel countersunk screws 3.5 x 30 mm from the WERZALIT product selection.

An expansion joint of at least 5 mm must be maintained at longitudinal joints.

Figure 22

7.6 Shifting of the joint pattern
Expansion due to thermal and climatic conditions (as shown in the drawing) can cause minor shifting of the joints. This shifting can affect one or two sides.

Figure 23

7.7 Levelness of the tile surface
The most severe bulging (convexity) of the tile surface may not exceed 3 mm, and the deepest deflection (concavity) may not exceed 2 mm. To make the measurement, place a straightedge over the width of a single tile and measure the largest distance between the straightedge and the tile surface. The largest bulge can be measured by ensuring that the straightedge is centred on the tile and perfectly level so that the distance to the tile is the same at both tile edges.