Check the package:
Check the Package: Upon arrival check immediately your package for damages. And ALWAYS check the models, quality, color and quantity before starting to install/mount Green Plank composite products. Any claims of visible defects made after the assembly or modification are not acceptable. Green Plank® composite products should always be mounted by competent professionals. Green Plank® composites decking should not be used for columns, beams, joists, support posts or other load bearing segments. To maintain warranty right, please always follow these installation instructions - and always use Original Green Plank® Decking accessories (clips, screws, caps, etc.).

Safety:
When dealing with any type of construction project, it is necessary to wear appropriate protective clothing to avoid any risk of injuries. Cutting, grinding or sanding should be done outdoors or in a well-ventilated area.

Product information:
Each Green Plank® mix color composite plank has a unique natural appearance. Because of the seemingly wooden structure several differences in color can appear. Since every tree is unique in its growth characteristics, wood as a natural product does not have an even structure. In order to give our terrace profiles their own distinctive appeal we intentionally highlighted those special properties of natural wood.
Depending on the preferred evenness in the terrace appearance, we recommend arranging, laying out and checking the profiles for color and structure in advance during daylight. In addition, similar to parquet flooring, we recommend simultaneously laying profiles from different piles to guarantee an even distribution on the laid surface.

Storage:
Store Green Plank® composite products under cover to maintain a clean surface. If stored outdoors, they must be covered with an opaque material. All products should be stored flat and on a dry surface. Stack units with banding and bottom supports aligned.

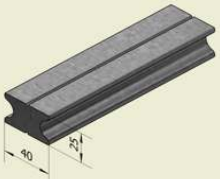
Acclimation:
Every material expands and contracts with temperature changes, and composite decking is no exception. Avoid potential problems by allowing time for proper acclimation of Green Plank to local temperatures. Expansion and contraction is not a product defect and not covered under the Green Plank warranty.
When installing and cutting, it is important that all boards must be kept as cool as possible by keeping them out of direct sunlight. Boards that have spent several hours in the sun will have expanded more than those kept in the shade, and consequently will contract more when they cool down resulting in uneven or bigger gaps. It is best to mark, cut, and install boards when they are all at roughly the same temperature.
Green Plank® Trims and Moulding products expand and contract with changes in temperature.

Contents

Green Plank
ENTRA Deck

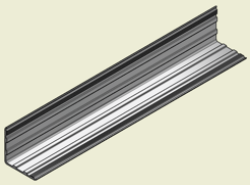
ENTRA Deck

Green Plank
Sub-framework bar



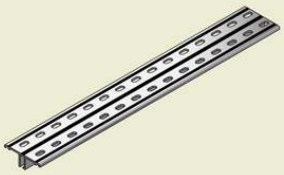
Sub-framework bar

Green Plank
Edge coverings

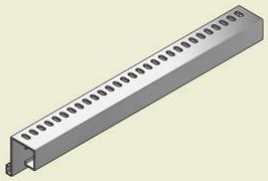


Corner list

F list



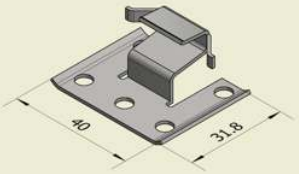
T list



Ventilation stripe

\

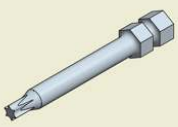
Green Plank
HidLoc hidden deck fasteners for decking and sub-framework (Screw, Torx Bit, Drill Bit are not included in the Kit)



Installation clip

Countersunk screw

4.0 x 25

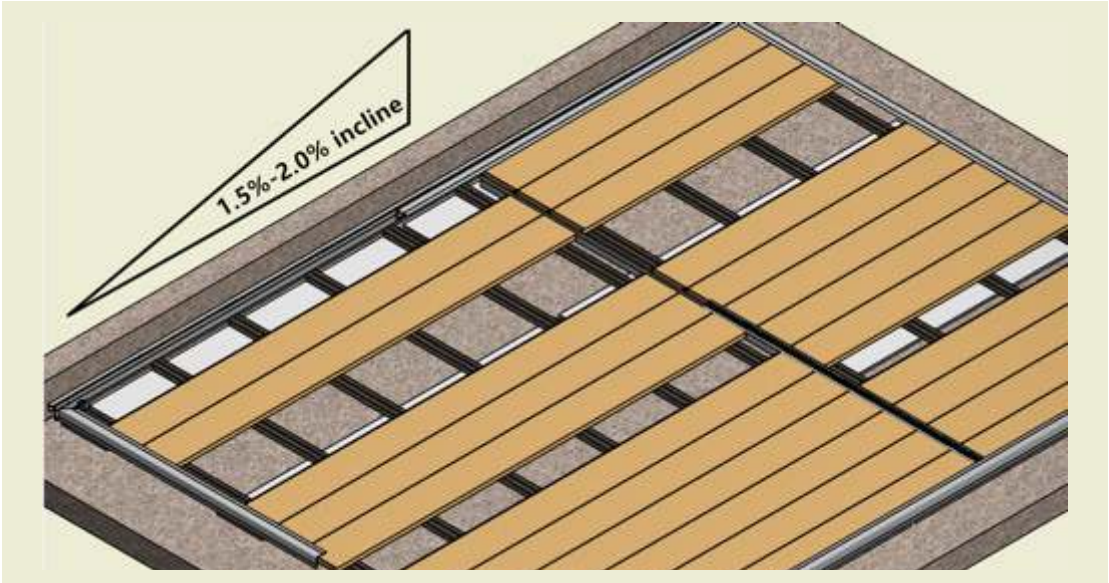


Torx Bit T15

Drill Bit

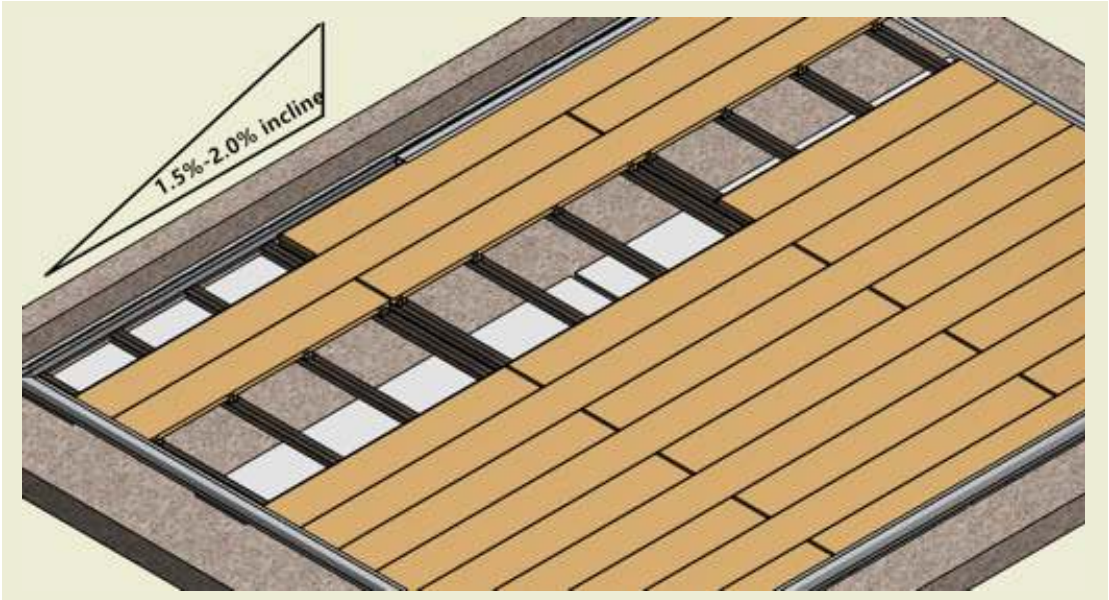
System Design 1.0

The screws and anchors for fastening the sub-framework bars and edge covering profiles are not included in the Green Plank product selection.

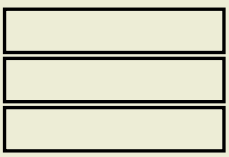


System Design 2.0

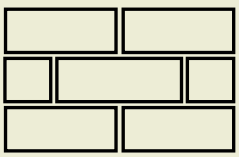
The screws and anchors for fastening the sub-framework bars and edge covering profiles are not included in the Green Plank product selection.



Installation Types



System Design 1.0
With visually closed longitudinal joints



System Design 2.0
With visually closed longitu-denal and transverse joints

1. General information

1.1 Scope of the installation instructions – what you should know

Please note that the information in these installation instructions is based on standard installation situations. Due to the endless diversity of conceivable floor layouts and terrace sizes, not every individual possibility can be considered in these installation instructions.

For this reason, we ask that you contact our Building Service department directly at **info@GreenPlank.eu** in the following cases:

- Special layouts, e.g. with rounded corners
- Deviating design structures and foundations
- Cases that are not dealt with here
- Other special questions concerning installation and working with the flooring material that are not answered in these instructions

We would be happy to answer your questions and develop detailed installation recommendations for you.

1.2 Areas of application

Green Plank ENTRA Solid terrace profiles is ideal as a floor covering for terraces and garden paths, concrete balcony floors, flat roofs and the like. For applications that require approval by building authorities, a load-bearing, closed substructure with sufficiently calculated dimensions is required as a base for the **ENTRA** profiles and associated sub-framework bars.

1.3 Working with the material - as easy as wood

The **Green Plank ENTRA** profile, sub-framework bar, etc. can be sawed, milled or drilled with all typical woodworking tools.

Important: Must pre-drill the material before inserting any screws to preventing cracking. (Twist frill is included in the accessories kit)

1.4 Disposal – what to do with waste

Waste pieces (cutting waste) can be disposed of as household or commercial waste; larger quantities should be disposed of as bulky refuse or at a recycling depot.

1.5 Color behavior - the natural influence of wood

Green Plank ENTRA profile is pigment penetrated and fades naturally over the course of time without losing the basic character of their color. They consist of the natural fibers-polymer composite (NFC) developed by Green Plank.

Properties due to the wood content

- Color deviations resulting from UV radiation and moisture are expected and natural.
- In particular, a natural lightening occurs in the initial weeks and months, depending on weathering influences. This lightening does not represent a defect.
- Color fluctuations within a profile or a batch are natural and highlight the natural character of wood.

☛ Water spots in the transition area of weathered and partially sheltered terrace surfaces

Water spots occur due to lignin, a natural constituent of wood that can be washed out under exposure to rain. They can generally be removed with large amounts of clean water and typical household cleaning tools. This effect is minor on surfaces exposed to heavy sunlight or completely rinsed off by rainwater. These water spots do not impair the quality of the terrace profile and do not represent a defect.

1.6 Cleaning and care - fast and easy

The **Green Plank ENTRA** profile requires no special care. However, larger instances of soiling should be cleaned off shortly after they occur. To do this, brush off the **Green Plank ENTRA** profile 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 profile surface, no rotary nozzle).

Spots from oil, grease, mustard, etc. can be removed effectively with products such as the following:

- Stain removal spray
- Power grease remover
- Multi-purpose cleaner

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

Algae and moss: Algae and moss as well as mould and fungi can grow on any outdoor surface, including this product. Regular cleaning of the terrace (even when it appears clean) prevents the development of conditions conducive to mould growth. We recommend our terrace cleaner for thorough cleaning.

Ice and snow: De-icing salt can be used on **Green Plank ENTRA** profile without concern. To avoid undesirable salt lines, we recommend washing off the terrace surface thoroughly after thawing.

2. Planning principles / installation information

2.1 Providing expansion joints

Fluctuations in temperature and moisture levels cause the **Green Plank ENTRA** profile to expand and contract in their length, width and thickness dimensions.

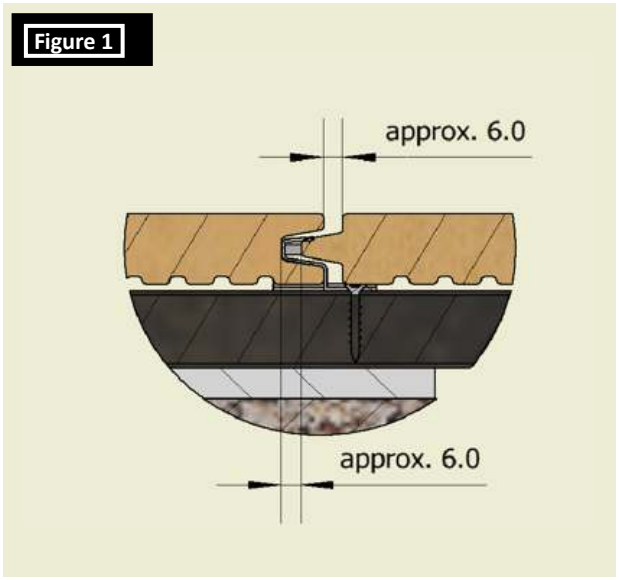
See also section 10, Changes due to climatic influences

The profiles expand by up to 3 mm/linear meter of profile length or profile width. This must be taken into account during laying by leaving corresponding expansion joints of 3 mm/linear meter 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.

The width expansion of the profile is absorbed or compensated for by the hidden installation clip by means of flexible spacers.

See Figure 1

Figure 1



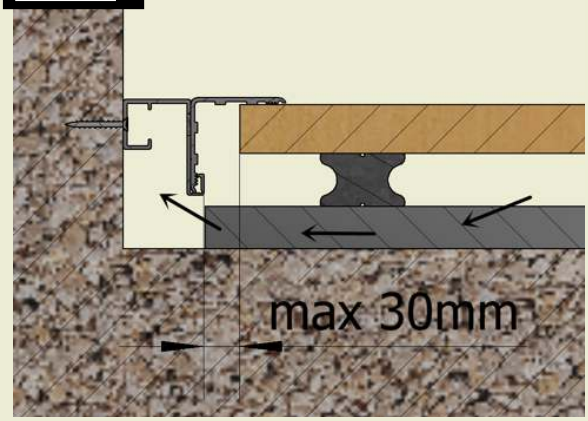
2.2 Planning and accounting for ventilation

The entire terrace structure must have good 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, soil or walls should absolutely be avoided.

See Figure 2

Figure 2



2.3 Surface drainage

The special fastening technique guarantees integrated drainage and a high load capacity by means of a hidden installation clip with flexible spacers. The clip ensures sufficient joint spacing even at maximum expansion to maintain unhindered drainage of surface water. The surface must be laid with a sufficient incline of 1.5 – 2 %.

Figure 3

See Figure 3

3. The optimal foundation

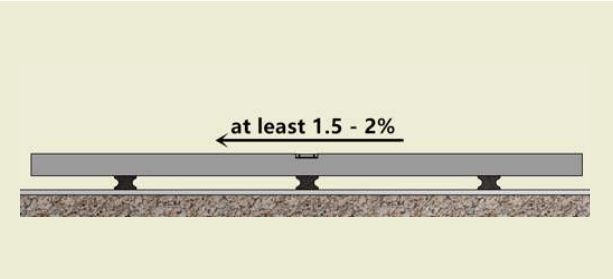
Correct foundation preparation is essential for a perfect installation of **Green Plank ENTRA** profile. Serious problems can be avoided at this stage that would only become apparent when the installation is finished and would be difficult or impossible to correct.

3.1 Inspecting the foundation

Inspect the condition of the foundation. Ensure a sufficiently load-bearing, consolidated foundation of ballast, chippings or the equivalent that is deep enough to prevent frost exposure. Avoid pooling of water underneath the flooring - if necessary, a drain should be installed.

3.2 Preparing the foundation

Natural ground (soil)



• In case of insufficiently consolidated ground, dig out the soil to a sufficient depth (40 – 80 cm)
• Fill the hole with crushed stone and compact the stone by vibration
• Then place an approx. 5 cm thick layer of gravel on top and rake level
• Ensure an incline of at least 1.5 – 2.0 %

See Figure 4 (page 8)

Important: Lay down concrete edging slabs as a base for sub framework bars.

Concrete floors (solid concrete platform)

• Foundation: Load-bearing concrete floor with the required incline to prevent the pooling of water
• Lay the sub-framework bars on the bare concrete platform – the sub-framework bars must not stand in water

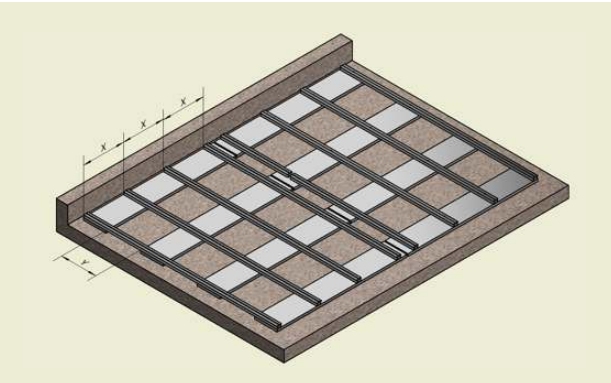
Important: Lay rubber pads 100 x 100 x 5 mm underneath

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

• Lay rubber pads 100 x 100 x 5 mm or sections of protective matting or the like underneath the sub-framework bars to protect the sealing layer against mechanical damage.

4. The correct sub- framework with sub- framework bars

Green Plank ENTRA profile may only be laid on a sub-framework of **Green Plank sub-framework bar** or an aluminum sub-framework. The sub-framework must always have point-like support to prevent the pooling of water (e. g. on concrete slabs, rubber pads, etc.).



☛ **Never lay the sub-framework bars in direct contact with soil, on the bed of gravel or on the concrete floor.**

4.1 Laying spacing of the sub-framework bars

Always lay the sub-framework bars flat!

• The laying spacing X of the sub-framework bars must not exceed **400 mm** (center-to-center distance).
• The support spacing Y for the sub-framework bars is max. **400 mm** (clear distance between concrete slabs or rubber pads).

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

Spacing of at least 20 mm!

• Sub-framework connections to all fixed borders such as walls or the ground must also have expansion joints of at least 20 mm.

See Figures 4 and 5 (pages 8), Ⓐ

• Sub-framework bar joints must have expansion joints of at least 20 mm and must be arranged with offset surfaces.

See Figures 4 and 5 (pages 8), Ⓑ

☛ **The outermost sub-framework bars laid on both face sides of the Green Plank ENTRA profile on each surface (including sub-areas) are called sub-framework edge bars.**

4.3 Laying and fastening the sub-framework bars

Green Plank ENTRA profile can alternatively be laid on sub-framework with Green Plank sub-framework bars. Surface

expansion free of resistance is accomplished by the installation clips.

5. Quick and easy installation of sub-framework bars

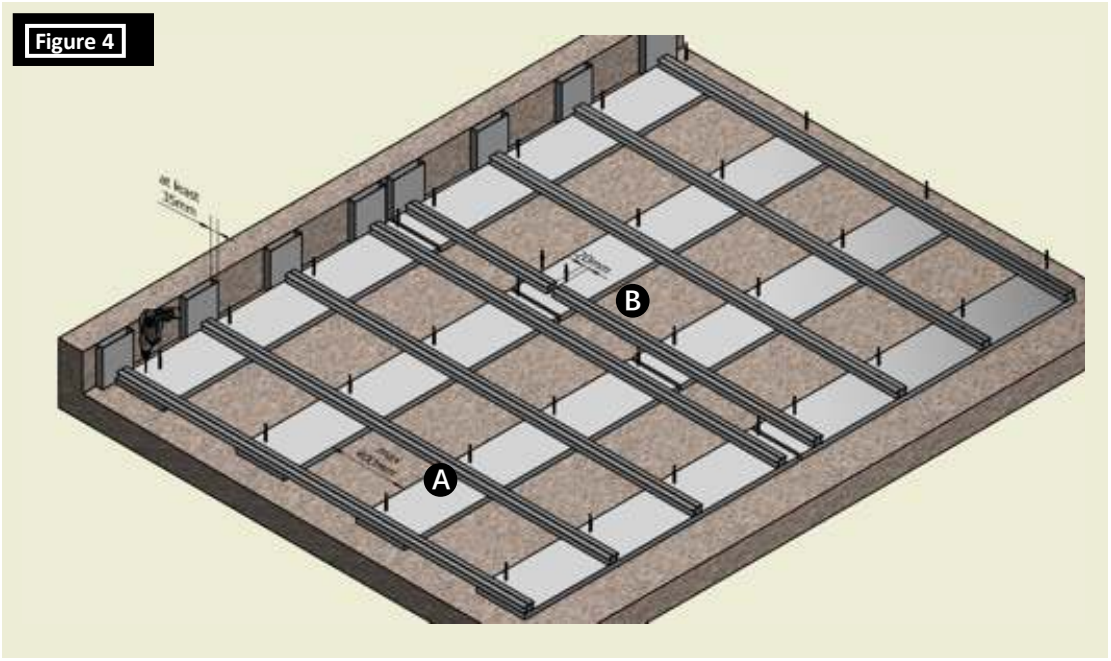
5.1 Natural ground and roof terraces. Concrete edging slabs as supports

The sub-framework bars must be vertically fastened at every support point (concrete edging slabs of at least 1000 x 250 x 50 mm with a clear distance between supports of max. 400 mm) with brackets and concrete screws 6 x 40 mm (not contained in the kit). To compensate for unevenness, additional rubber pads can be placed beneath the sub-framework bars.

Concrete edging slabs

At least 1000 x 250 x 50 mm · Clear distance 400 mm · Edge distance at least 20 mm Ⓐ

Figure 4

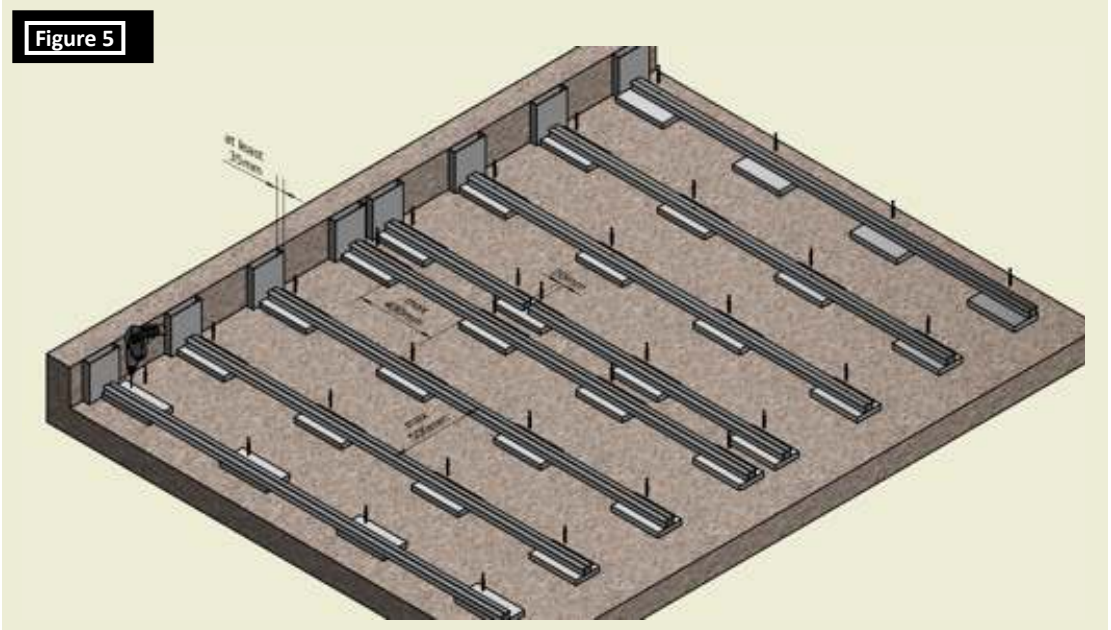


5.2 Concrete floors and roof terraces

The sub-framework bars can be directly screwed to a concrete surface with additional rubber to compensate for unevenness. Fastening material has to be provided by the customer, not included in the delivery.

Important: Lay rubber pads 100 x 100 x 5 mm underneath the sub-framework bars.

Figure 5

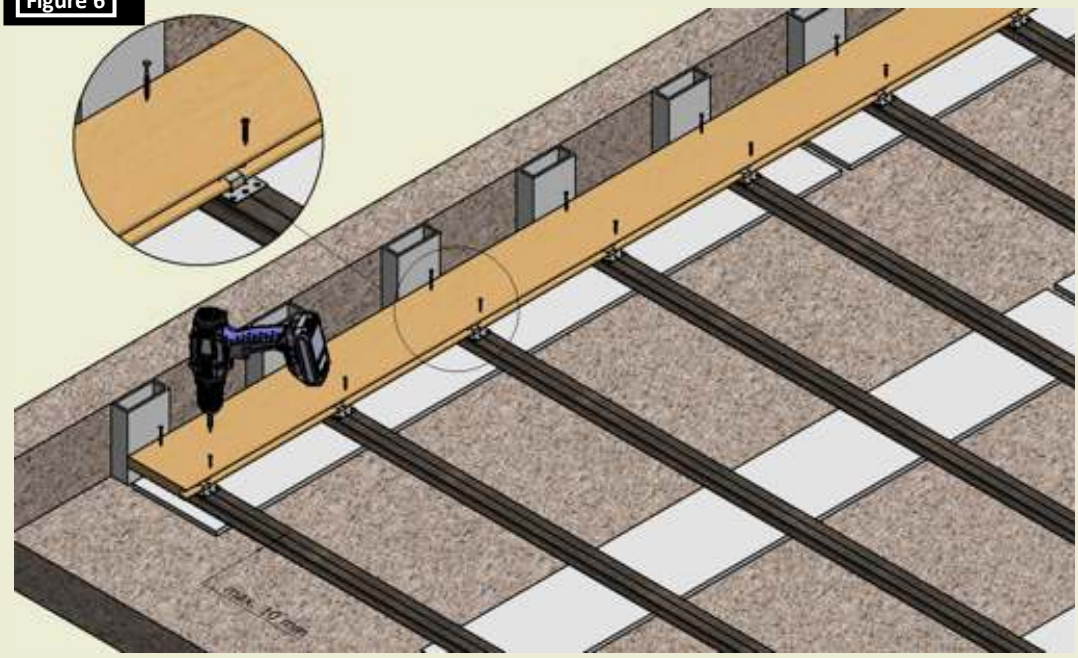


6. Laying the profiles

The fixing of the **Green Plank ENTRA** profile is carried out with installation clips and stainless steel countersunk screws 4.0 x 25 mm, and every sub-framework bar must be affixed in this way. At least one screw must be inserted per installation clip. A minimum of 3 support points (on 3 sub-framework bars) is generally required for the **Green Plank ENTRA** profile.

☛ Overturning the screws reduces the fastening strength and can result in damage over time.

Figure 6

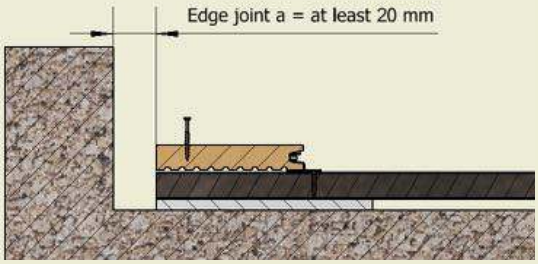


6.1 Laying with cutting to width

The starting profile can be individually cut to width on the tongue side on site. A visible countersunk screw 4.0 x 40 mm in a countersunk hole of 4 mm diameter is required next to the hidden screw connection of the starting profile with installation clips. Pay careful attention to the straight alignment of the starting profile.

See Figures 7

Figure 7



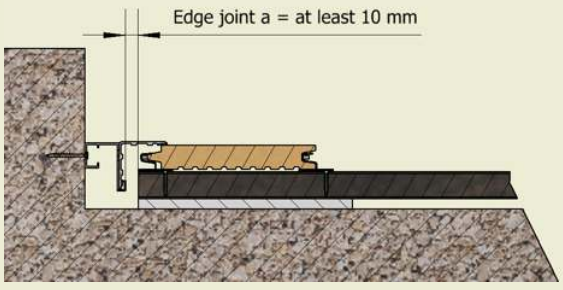
6.2 Laying without cutting to width

Cutting to width can be skipped if the starting profile is covered with overlapping aluminum profiles (see section 8, Edge and joint coverings).

Instead of screws, the profile can also be fastened with installation clips. This requires that an installation clip be placed first on every sub-framework bar. The spacers of these “initial” installation clips must first be bent up to 180°. Then insert the ENTRA profile with the tongue side and insert a hidden screw with the next installation clip.

See Figures 8

Figure8

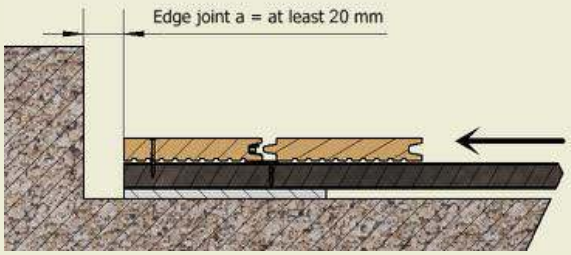


6.3 Continuation of laying

Every additional profile is inserted with the side groove into the installation clip of the previous profile and fastened in turn with hidden countersunk screws 4.0 x 25 mm and installation clips. The installation clip determines the joint width by means of the spacers. The production-related tolerances in the profile coverage width must be taken into account!
(The screw is contained in the accessories kit).

See Figures 9

Figure 9

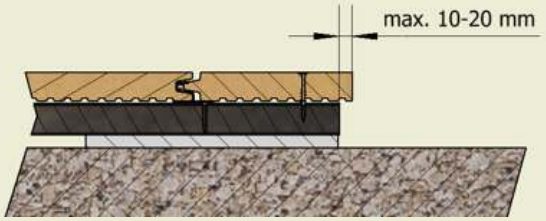


6.4 End of laying

The end profile can be individually cut to width. Visible screw connection of the end profile in a countersunk hole of diameter 4 mm with countersunk screw 4.0 x 40 mm. The screw can be covered by edge covering profile eventually.

See figure 10

Figure 10



6.5 Profile longitudinal joint

The **Green Plank ENTRA** profile can be laid in a staggered arrangement. There must be one sub-framework bar underneath both conterminal Longitudinal profiles. Longitudinal profile joints must always be centered on an open butt joint. The size of the open butt joint is at least 7.5 mm.

See figure 11

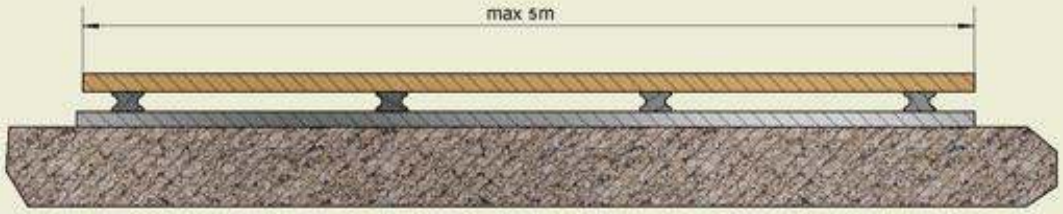
Figure 11

7. Expansion joints

7.1 Areas smaller than 5 m in length and width

For areas smaller than 5 m in total length, the expansion or edge joints against all fixed borders (e. g. house walls, garden walls, shafts, paving block border, posts, railings, rain pipes, etc.) must be at least 20 mm.
The edge joints can be covered with the Green Plank cover angle, if necessary. **See section 8.3 (Wall connection)**

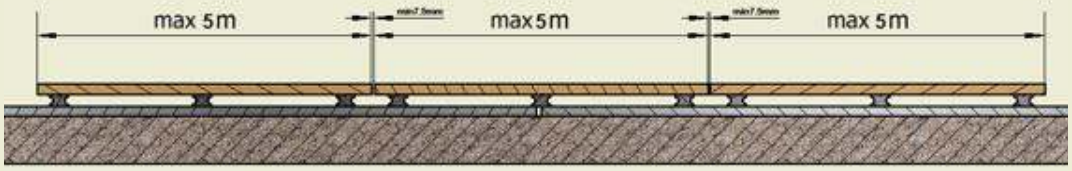
Figure 12



7.2 Areas larger than 5 m in length

Expansion joints along the profile length for sub-areas
Terrace surfaces with a total length (in the profile length direction) greater than 5 m must be divided into sub-areas with continuous separating joints between them. The open butt joint is at least 7.5 mm.

Figure 13

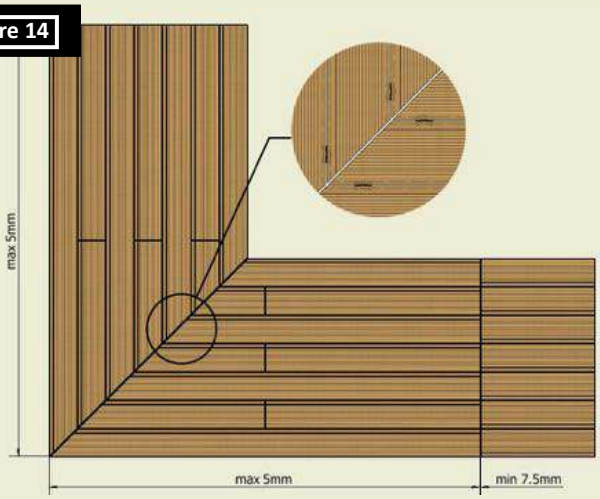


7.3 Expansion joints for miter laying

When laying with miter joints, an expansion joint must be ensured at the miter joint as well. Separating joints must also be created after no more than another 5 m of area length.
See Figure 12

Create the miter joint such that the profile ends of each sub-area rest against a separate sub- framework bar (running parallel to the miter joint). Fastening of the sub-framework bar in the area of the miter joint takes place at each

Figure 14

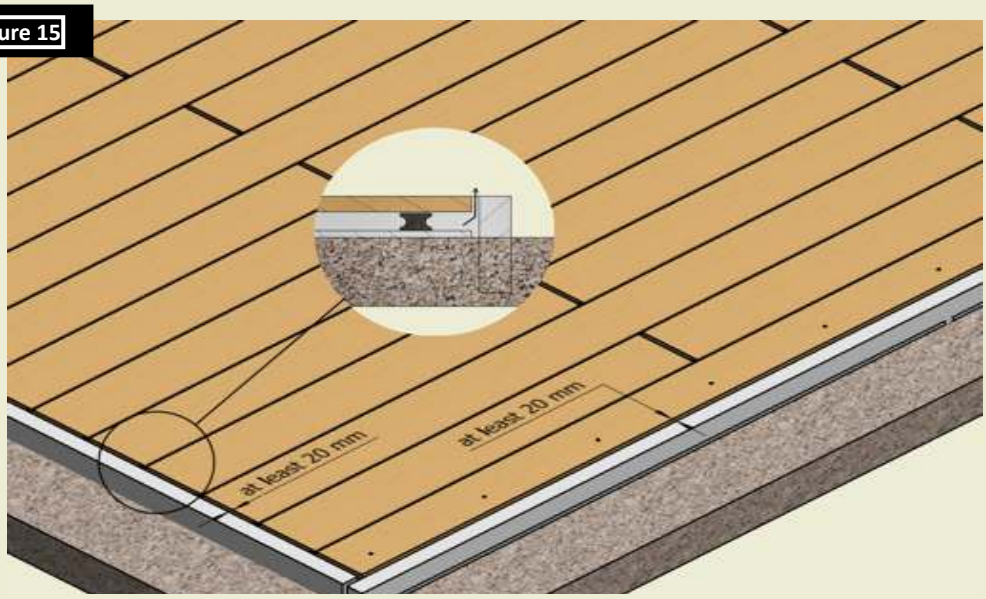


end of the sub-framework bar.
See Figure 14 (detail image)

8. Edge covering

8.1 Edge covering with border fame

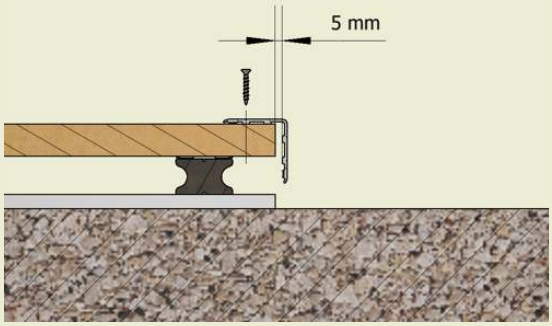
Figure 15



8.2 Edge covering with Aluminum corner list

Edge covering can be created using aluminum corner list. In this case, it is essential to consider the required expansion of the terrace surface toward the edge.

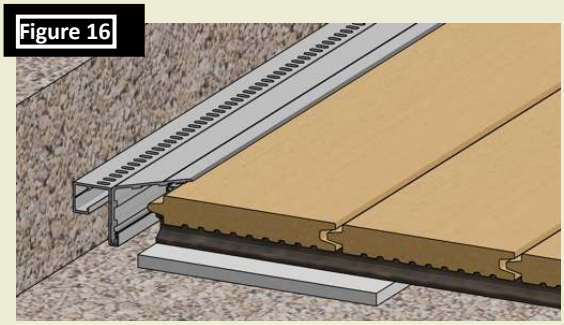
Figure 16



8.3 Wall connection

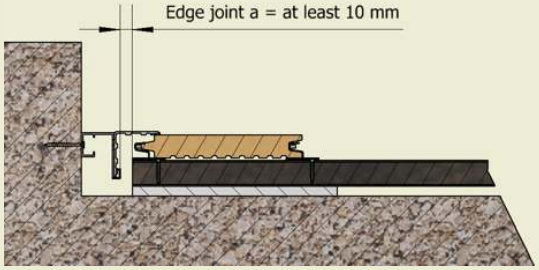
For a proper wall connection, the aluminum Ventilation stripe can be used together with corner list to cover the edge towards wall.
This wall connection allows longitudinal expansion of the ENTRA profiles while also covering joints. Ventilation of the sub-framework is also ensured by the holes punched into the aluminum ventilation stripe.
See Figures 16

Figure 16



Fastening process:
1. The aluminum 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 aluminum cover angle is clipped into the aluminum wall connection profile (like a zipper). If necessary, a lubricant can be used to facilitate clipping in the aluminum cover angle. An expansion joint of at least 5 mm must be maintained at longitudinal joints

Figure 17



8.4 Joint covering

Separating and expansion joints for sub-areas up to max. 5 m profile length or max. 5 m area width as well as mitre joints can be covered with the T list and corner list as base profile. This requires a joint size of at least 30 mm in accordance with the width of the base profile.
The base profile must be centred to the joint such that uniform expansion of both sub-areas toward the joint is ensured.
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 into 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.

Figure 18

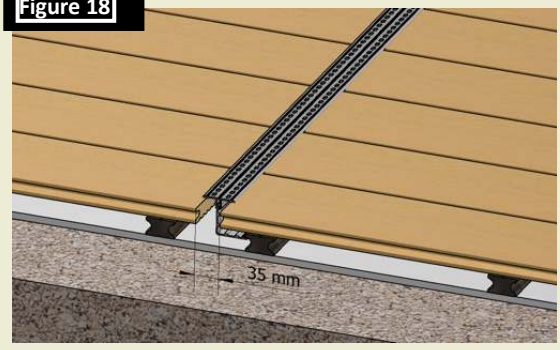
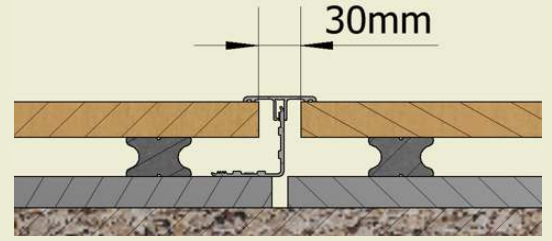


Figure 19



8.5 Edge covering with Green Plank cover angle

In applications in which a right angle corner needs to be covered, the Green Plank Corner list can also be used. The corner list is cut into 45° angle and fastened to the edge plank with stainless steel counter-sunk screws 4.0 x 30 mm.

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

See Figures 20 and 21

Figure 20

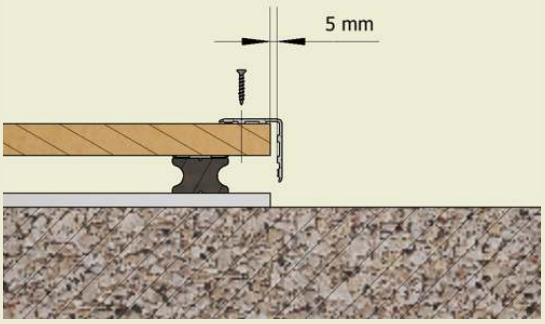
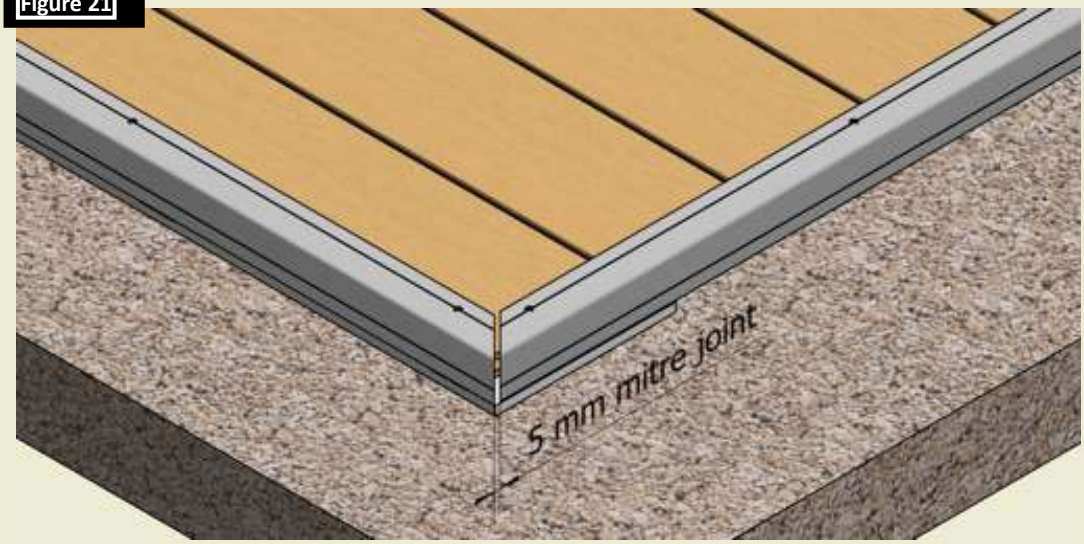


Figure 21



9. Changes due to climatic influence

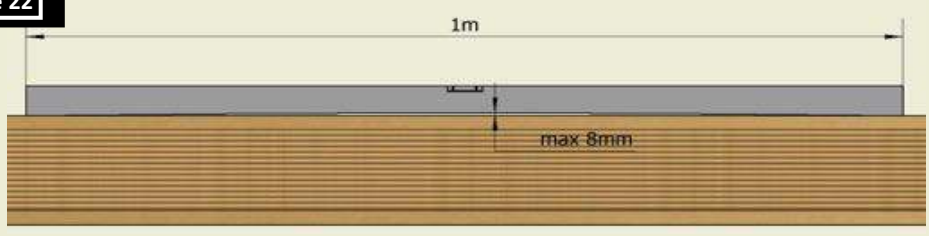
Green Plank ENTRA profile consists of the high-quality natural-fibers-polymer composite (NFC). As with every wood product, this material also reacts to climatic influences in the form of temperature and moisture fluctuations. These affect the dimensions and shape of the product.

Changes to the shape primarily involve the properties of longitudinal elongation, lifting up of the profile ends and changing of the coverage width (and therefore reduction of the joint widths). Within the limits described here, changes to the specified properties are considered normal behavior of the natural-fibers-polymer composite (NFC) and do not represent defects.

9.1 Longitudinal elongation

If a measuring stick with a length of 1 m is placed at the location with the longest elongation, the largest permissible gap between the profile and the measuring stick is 8 mm.

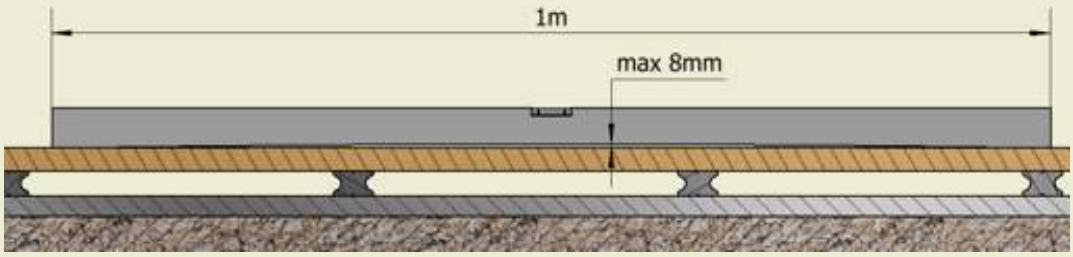
Figure 22



9.2 Lifting up of the profile ends

If a measuring stick with a length of 1 m is placed at the location with the most pronounced flaring, the largest permissible gap between the profile and the measuring stick is 8 mm.

Figure 23



10. Pedestal

Pedestal can be used to support and leveling the sub-framework. The sub-framework bars need to be screwed together with the Pedestal.

See figures 24 and 25

Figure 24

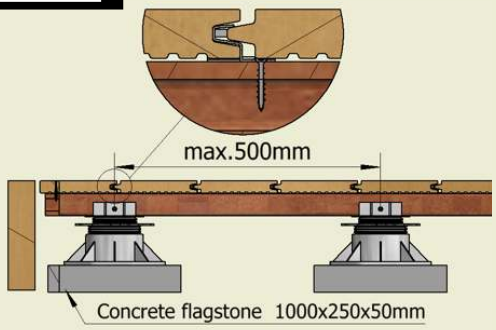
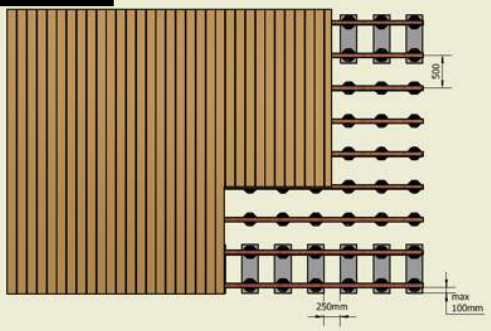


Figure 25



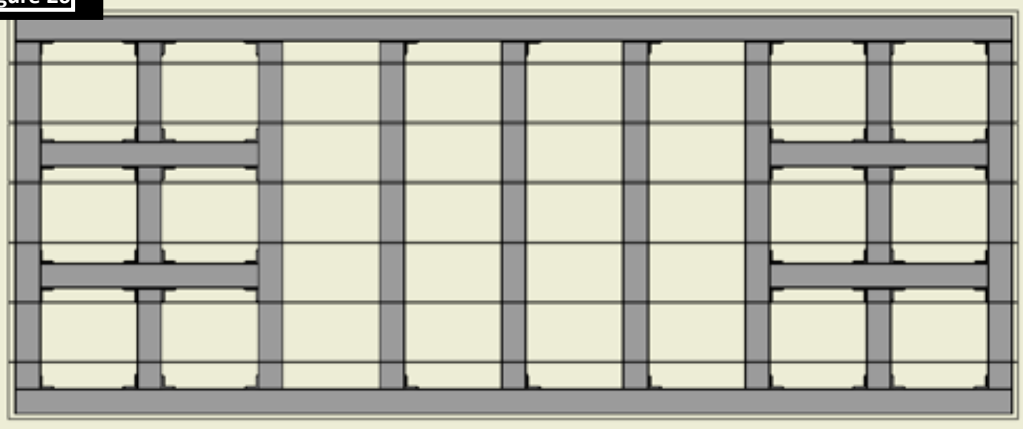
11. Installation alternatives

If it is not possible to attach the sub-framework to the ground, or in cases of low installation height, **Green Plank ENTRA** profile can also be laid on a frame structure (Figure 26) or a cross-batten framework (Figure 27).

Frame structure:

The frame structure can either be welded or riveted with angle brackets.

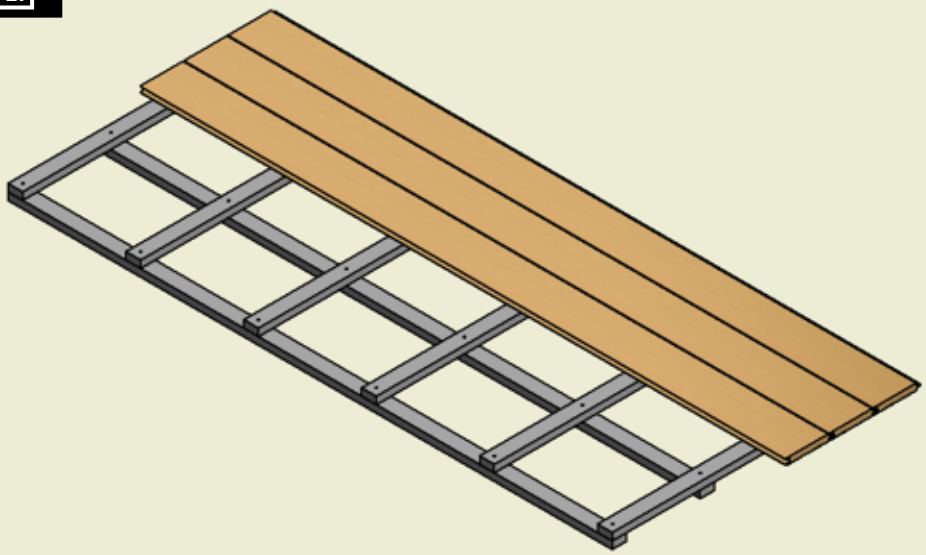
Figure 26



Cross-batten framework:

The intersections of the cross-batten framework are either screwed (self-drilling screws 3.9 x 32 mm) or riveted (rivets 5 x 30, provided by customer).

Figure 27



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