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**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.

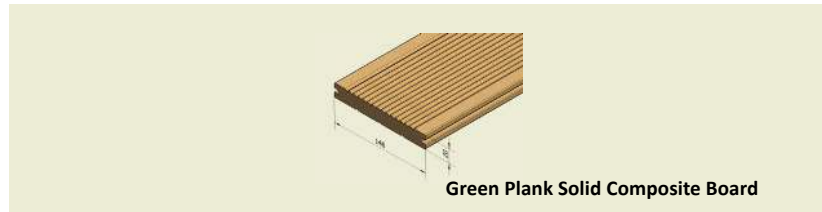
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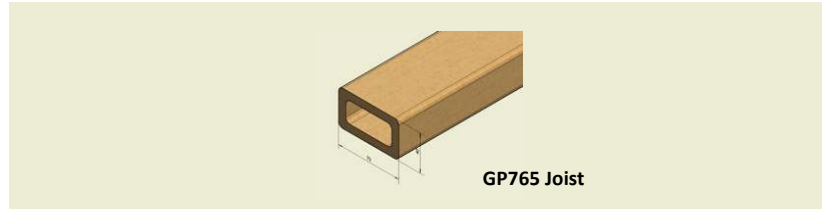


## Green Plank Composite Decking Solid Boards

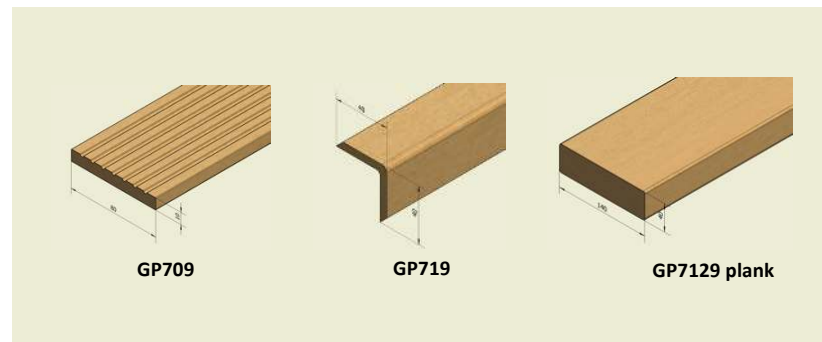
### Green Plank Solid terrace board



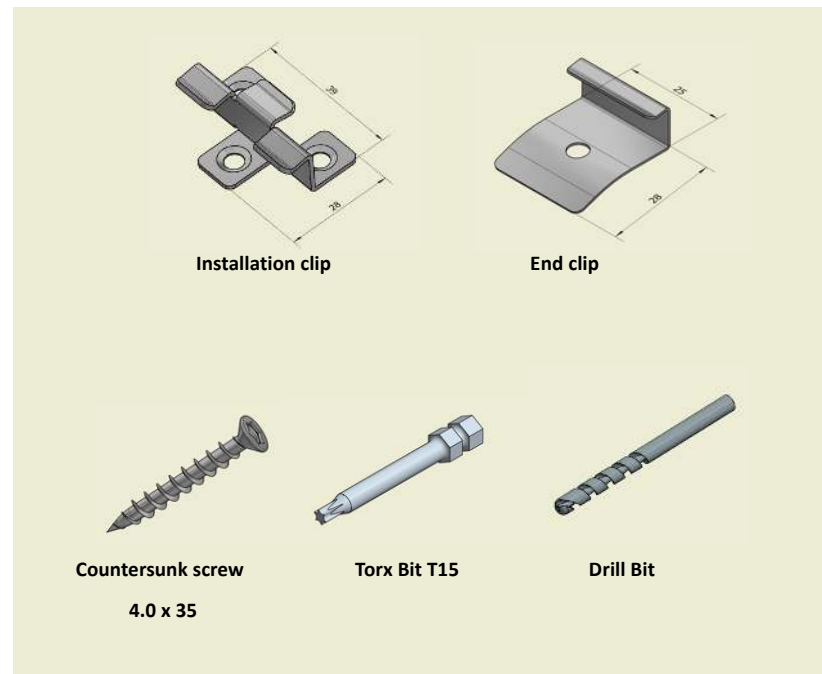
### Green Plank Sub-framework bar GP765



### Green Plank Edge coverings GP709 & GP719 & GP7129

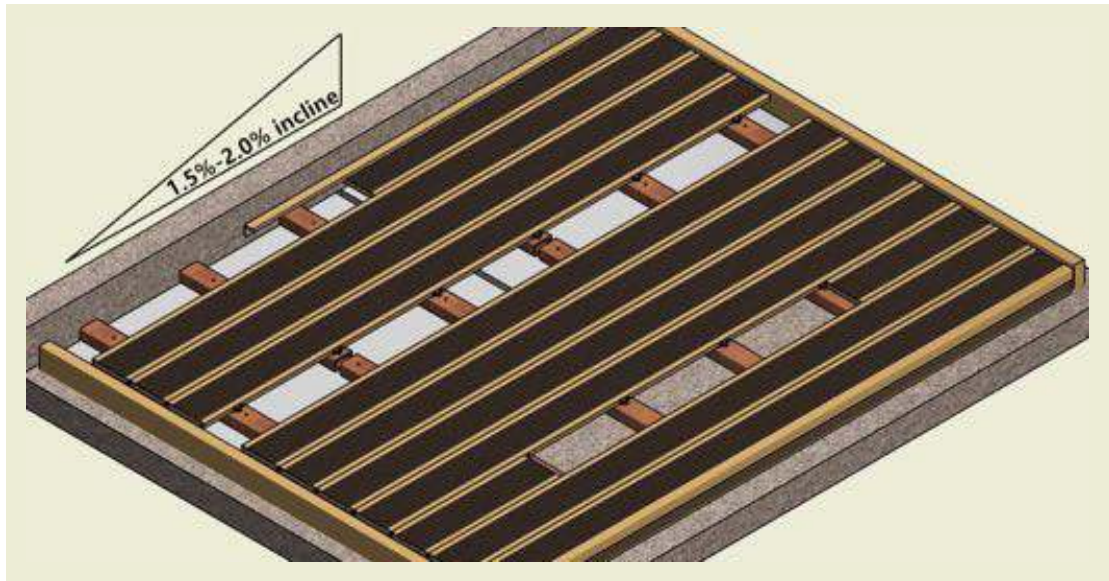


### Green Plank Accessories Kit for decking and sub-framework



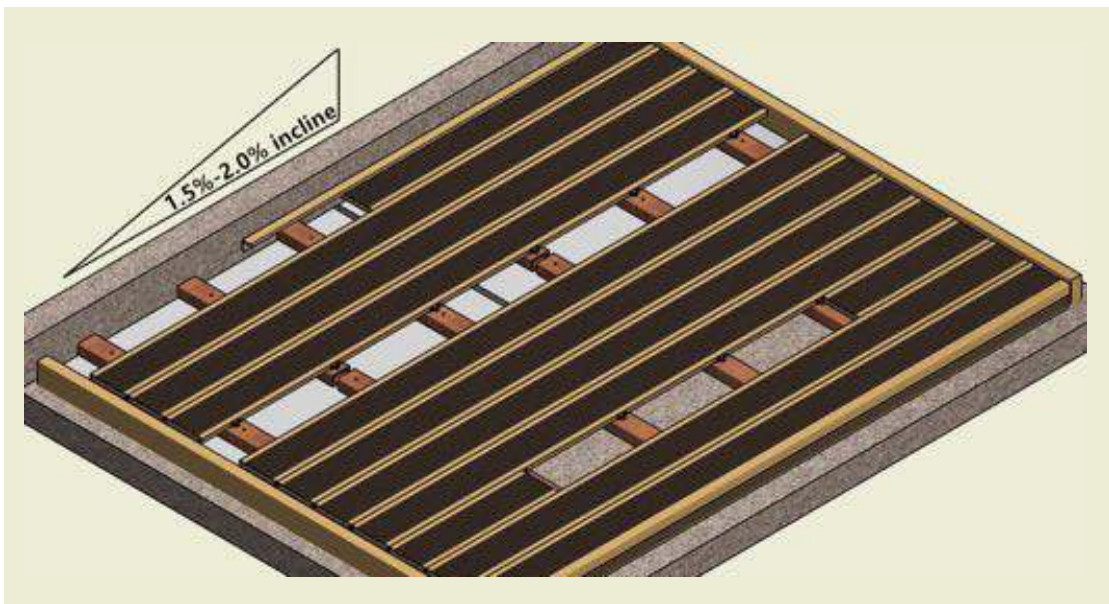
### System Design 1.0

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

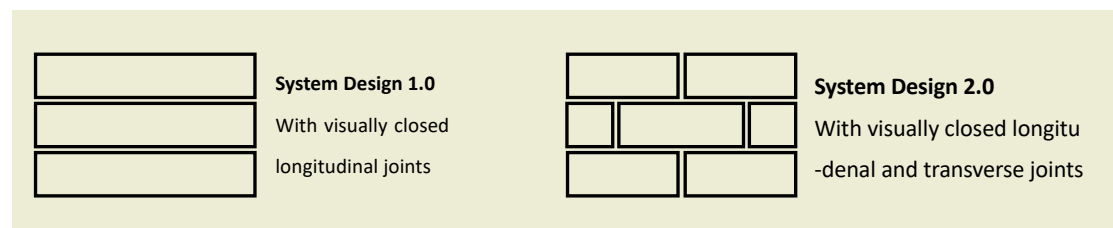


### System Design 2.0

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



## 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](mailto: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 Marine Solid Composite Boards** are 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 **solid composite boards** and associated sub-framework bars.

### 1.3 Working with the material - as easy as wood

The **Green Plank Marine Solid Composite Board**, 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 drill 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 Marine Solid Composite Board** is pigment penetrated and fade 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 Marine Solid Composite Board** 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 Marine Solid Composite Board** 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 Marine Solid Composite Board** 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

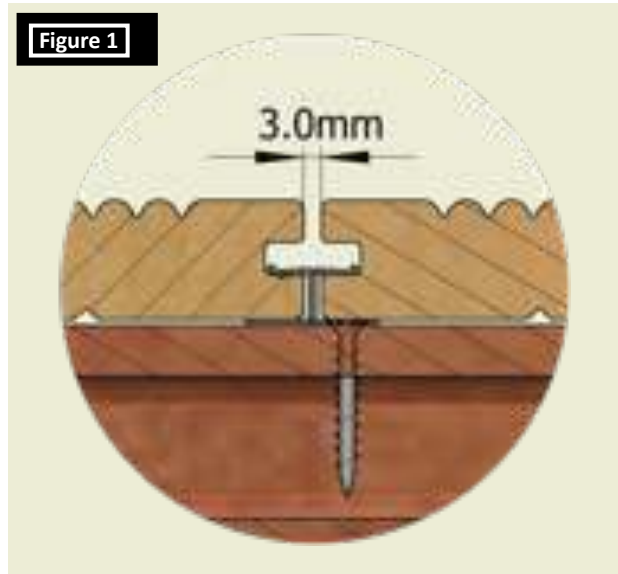
Fluctuations in temperature and moisture levels cause the **Green Plank Marine Solid Composite Board** to expand and contract in their length, width and thickness dimensions.

See also section 10, Changes due to climatic influences

The profiles expand by up to 2 mm/linear meter of profile length or profile width. This must be taken into account during laying by leaving corresponding expansion joints of 2 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

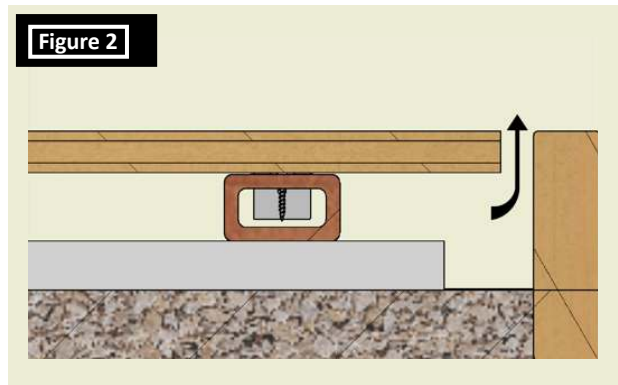


#### 2.2 Planning and accounting for ventilation

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.

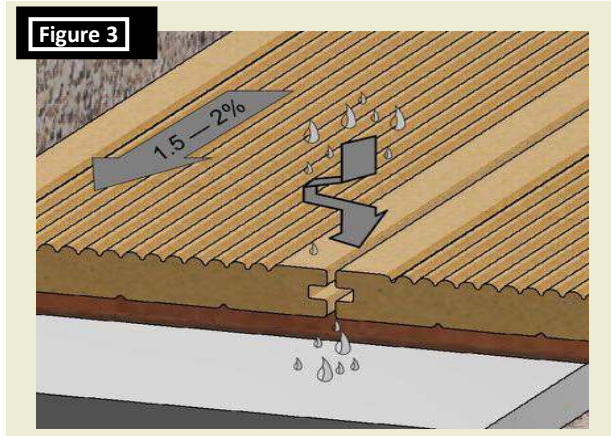
See Figure 2



**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 grooved side must be laid with a sufficient incline of 1.5 – 2 %.

See Figure 3



**3. The optimal foundation**

Correct foundation preparation is essential for a perfect installation of **Green Plank Marine Solid Composite Board**. 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.

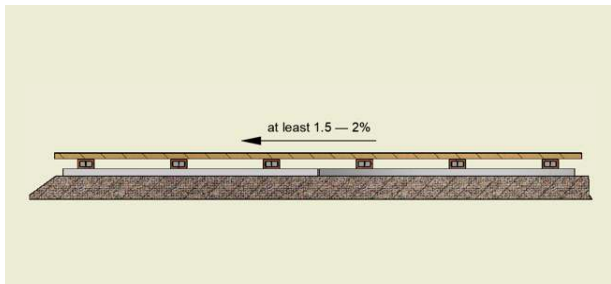
**3.2 Preparing the foundation**

**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

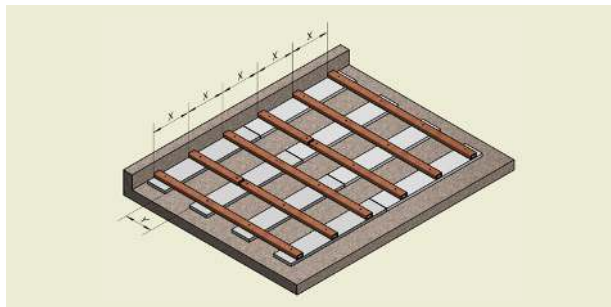
**Roof terraces and concrete balconies** with top-side sealing layer (bitumen sheeting, etc.)

- 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 Marine Solid Composite Board** may only be laid on a sub-framework of **Green Plank sub-framework bar GP765** 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), **A**

- 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), **B**

- ▀ The outermost sub-framework bars laid on both face sides of the Green Plank Marine Solid Composite Board on each surface (including sub-areas) are called sub-framework edge bars.

### 4.3 Laying and fastening the sub-framework bars

Green Plank Marine Solid Composite Board can alternatively be laid on sub-framework with Green Plank sub-framework bars. Surface expansion free of resistance is accomplished by the installation clips.

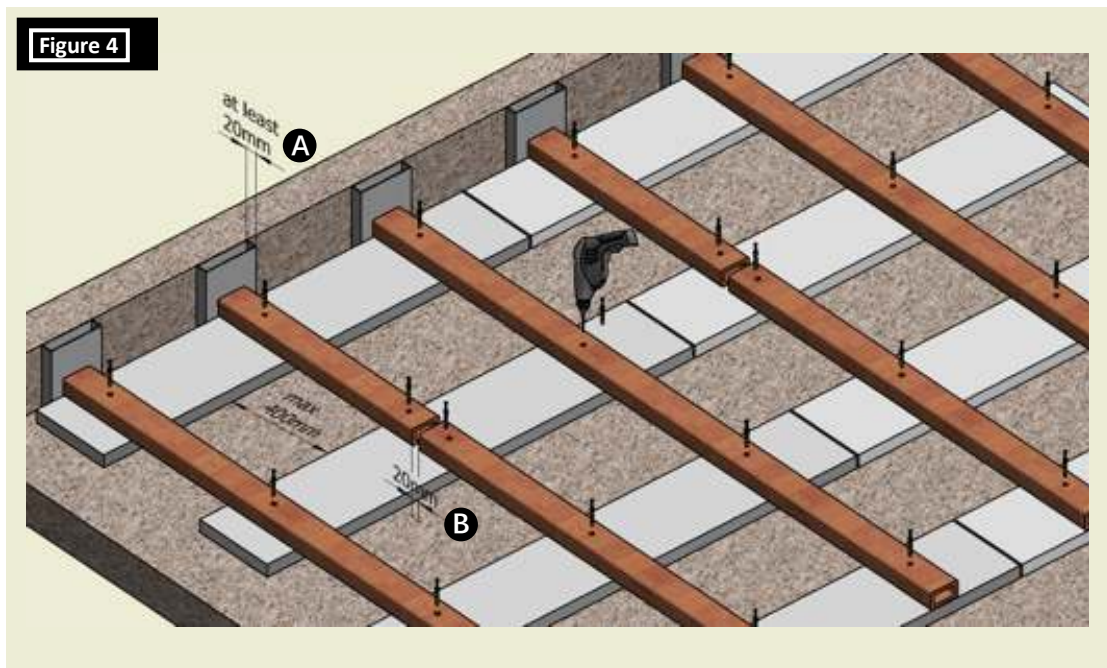
## 5. Quick and easy installation of sub-framework bars

### 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 **A**

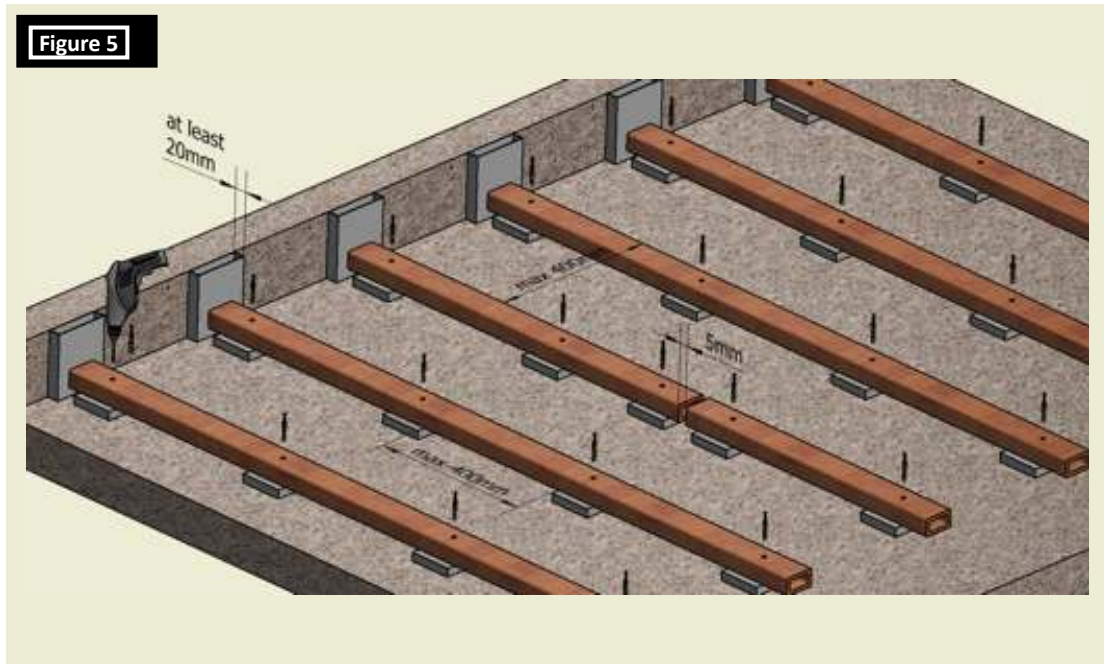


### 5.2 Concrete floors and roof terraces

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.

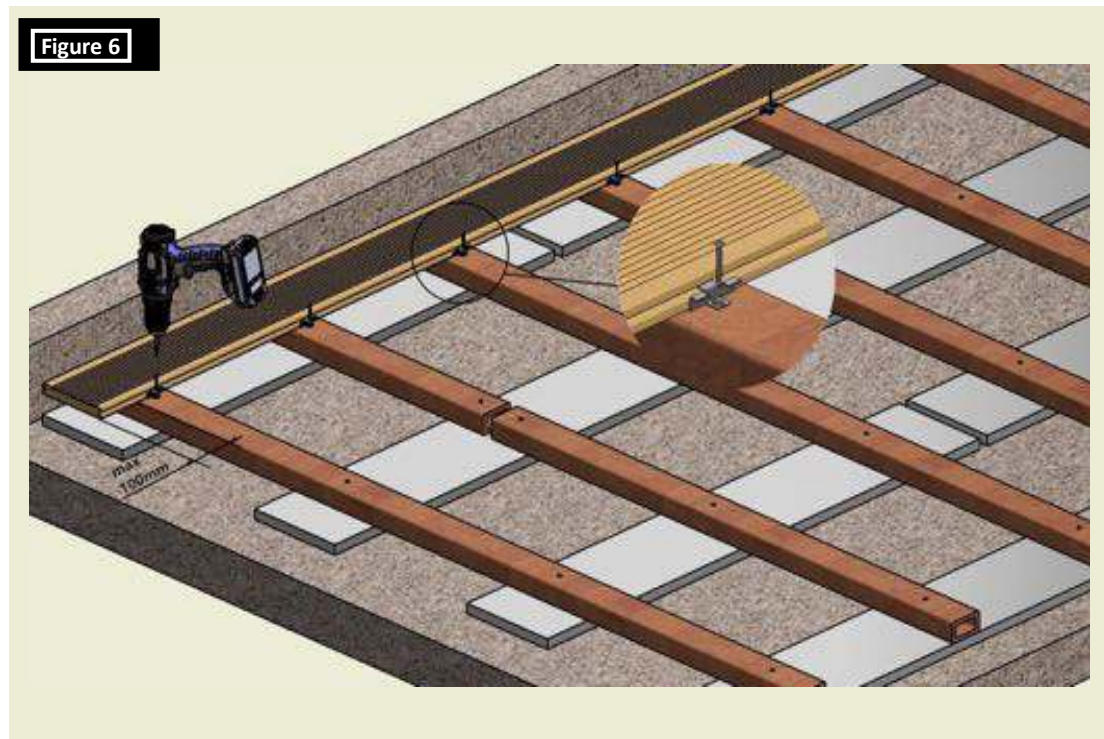




## 6. Laying the profiles

The fixing of the **Green Plank Marine Solid Composite Board** is carried out with installation clips, end clip and stainless steel countersunk screws 4.0 x 35 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 Marine Solid Composite Board**.

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

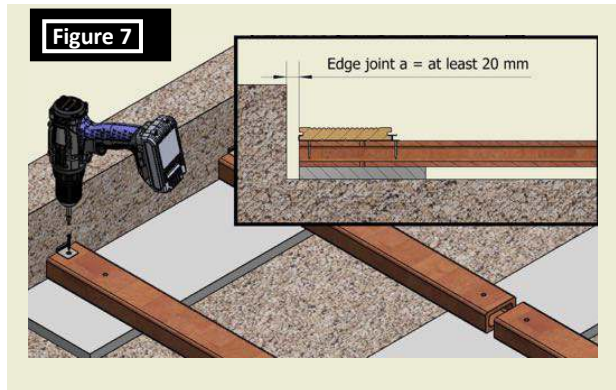


## Green Plank Composite Decking Solid Boards - Laying the Boards

### 6.1 Laying the starting profile

The starting profile need to be installed with the hidden end clip. Fasten the end clip at the edge of sub-framework bar with countersunk screw 4.0 x 35, insert the starting profile with side groove into the end clip. Insert a hidden screw with the next installation clip to lock the profile. Pay careful attention to the straight alignment of the starting profile.

See Figures 7



### 6.2 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 35 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).

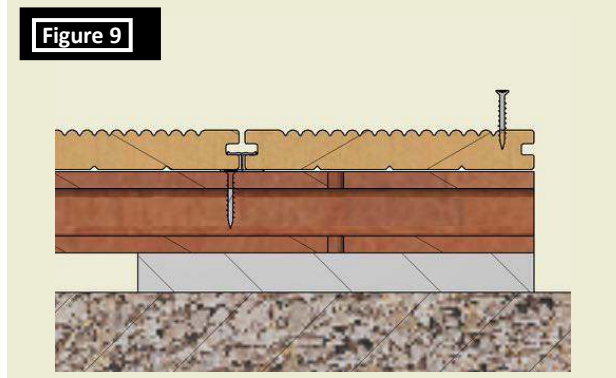
See Figures 8



### 6.3 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 35 mm. The screw can be covered by edge covering profile eventually.

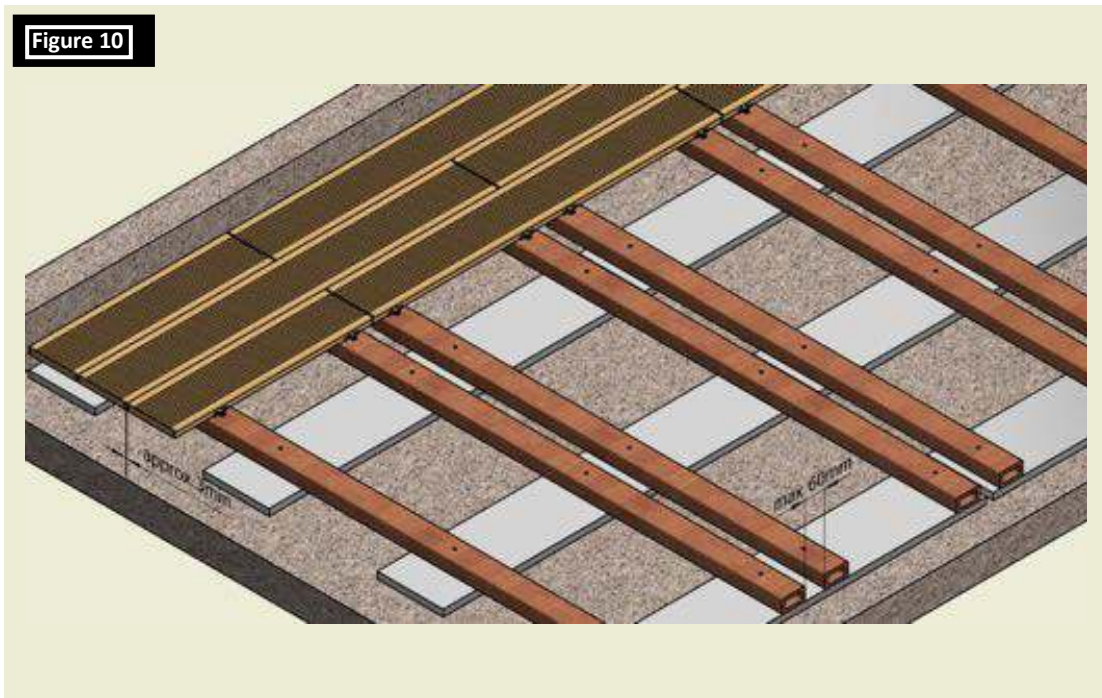
See figure 9



### 6.4 Profile longitudinal joint

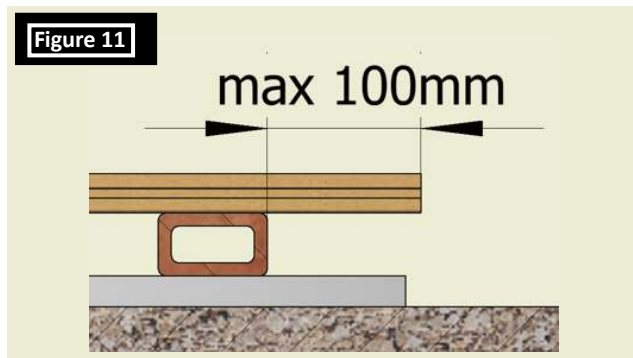
The **Green Plank Marine Solid Composite Board** can be laid in a staggered arrangement. There must be one sub-framework bar underneath both conterminal Longitudinal profiles. Longitudinal profile joints must always be centered on an open butt joint. The size of the open butt joint is at least 7.5 mm.

See figure 10



### 6.5 Profile excess length

The side profile excess length is max. 100 mm.  
See Figures 11

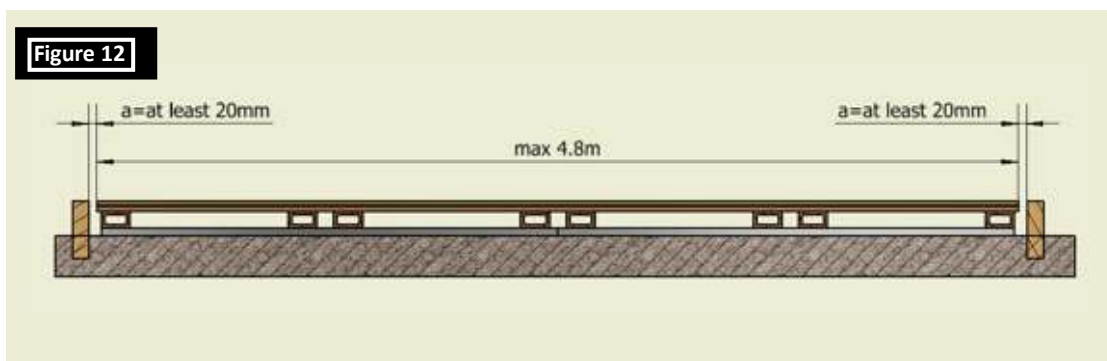


## 7. Expansion joints

### 7.1 Areas smaller than 4.8 m in length and width

For areas smaller than 4.8 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 8.2 (Wall connection)

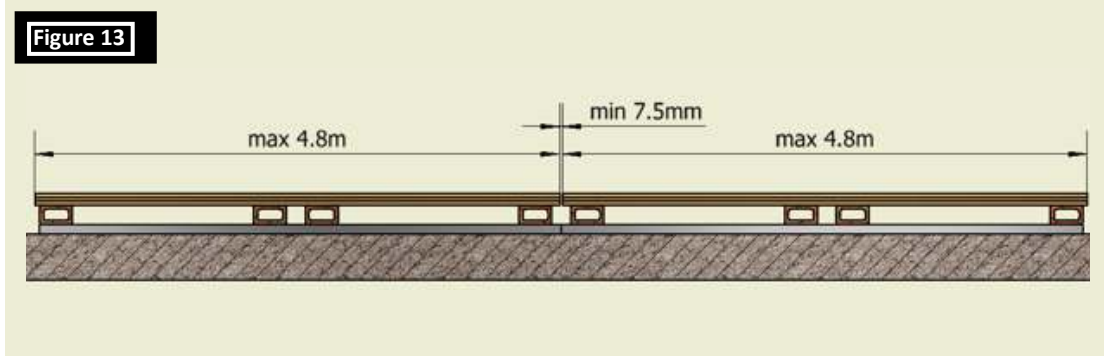


## Green Plank Composite Decking Solid Boards - Expansion Joints

### 7.2 Areas larger than 4.8 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.



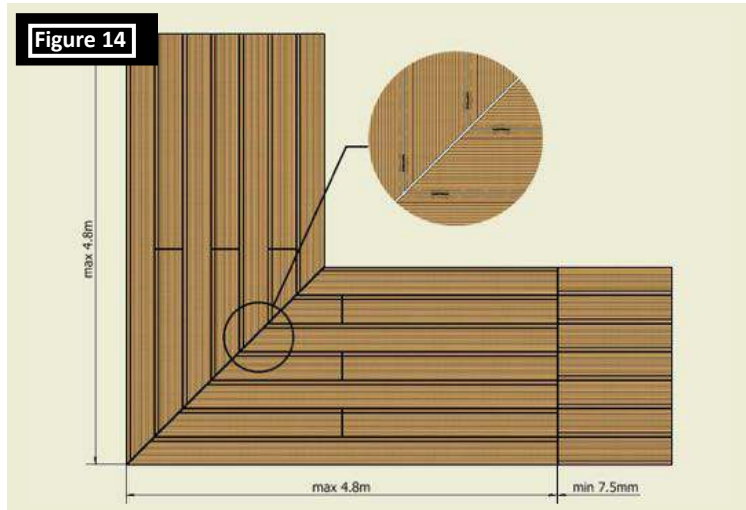
### 7.3 Expansion joints for miter laying

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 4.8 m of area length.

See Figure 12

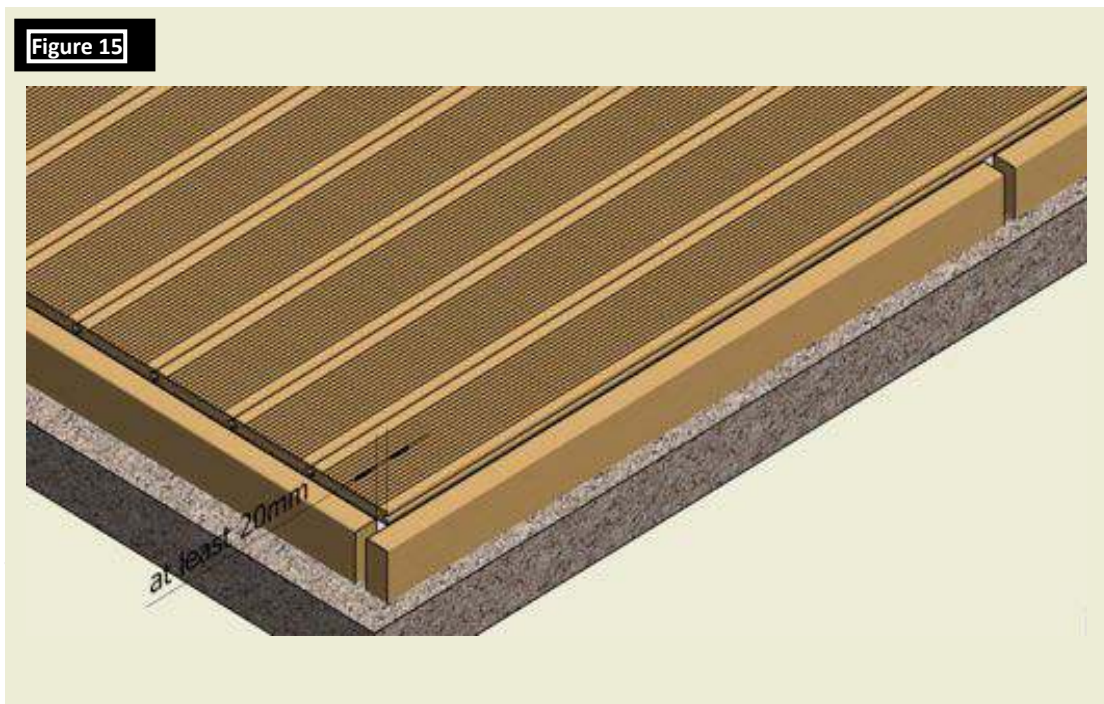
Create the miter joint such that the profile ends of each sub-area rest against a separate sub- framework bar (running parallel to the miter joint). Fastening of the sub-framework bar in the area of the miter joint takes place at each end of the sub-framework bar.

See Figure 14 (detail image)



## 8. Edge covering

### 8.1 Edge covering with border fane



### 8.2 Wall connection

For a proper wall connection, the Green Plank cover angle profile GP719 can be used to cover the edge towards wall. The cover angle is fastened to the **Green Plank Marine Solid Composite Board** approximately every 50 cm with stainless steel counter-sunk screws 4.0 x 35 mm.

See Figures 16

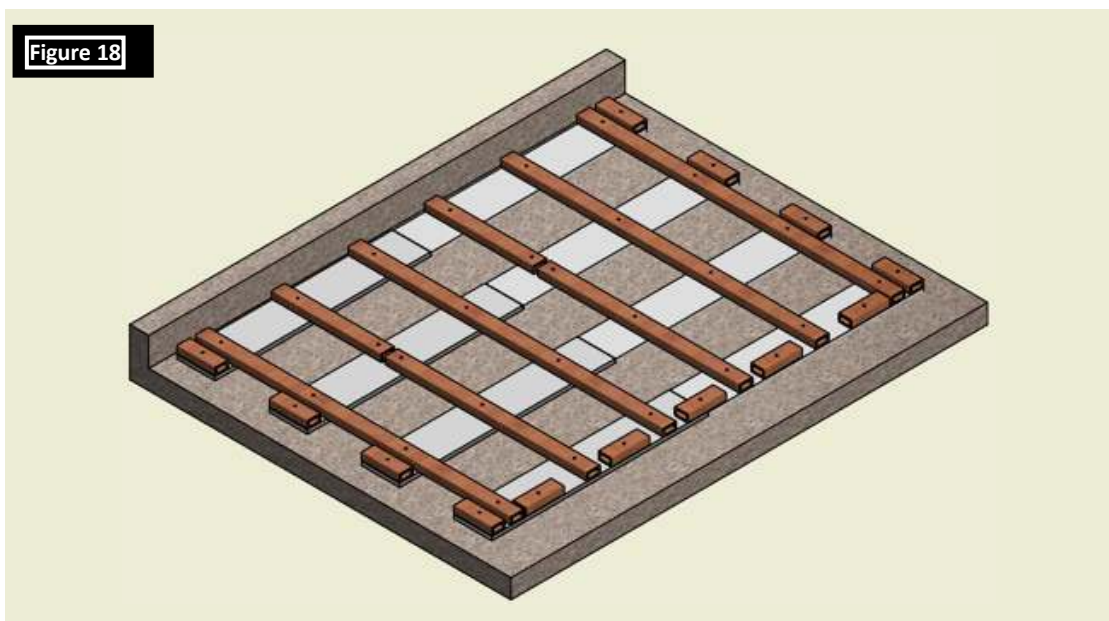
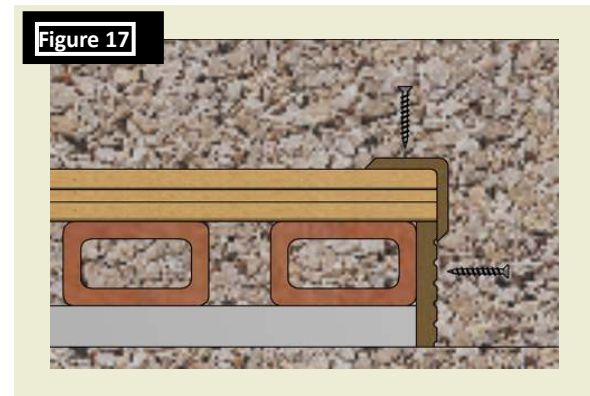


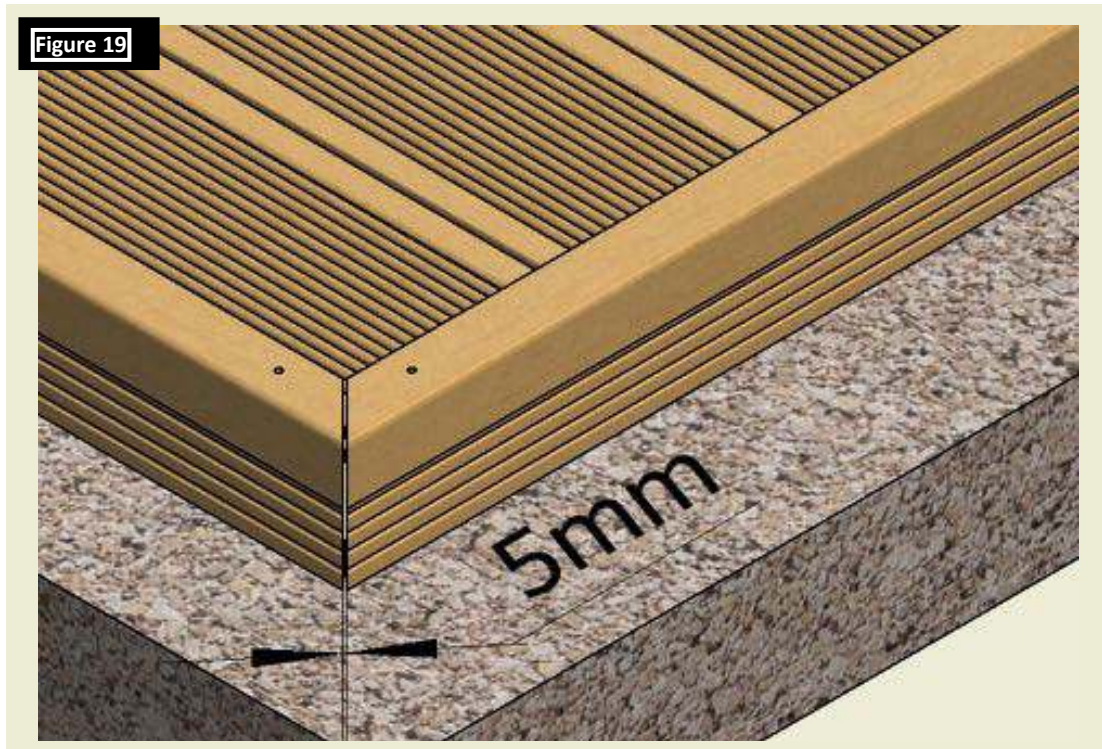
### 8.3 Edge covering with Green Plank cover angle

In applications in which the whole sub-framework need to be covered, the Green Plank edge covering profile GP709 can be used. Fasten the extra sub-framework bars to the concrete support slab on the edges or directly to concrete floor. The edge covering profile is fastened to the extra sub-framework bars with stainless steel counter-sunk screws 4.0 x 30 mm.

Fasten the cover angle profile to cover the joint between GP777 and GP709. An expansion joint of at least 5 mm must be maintained at longitudinal and miter joints.

See Figures 17, 18 and 19





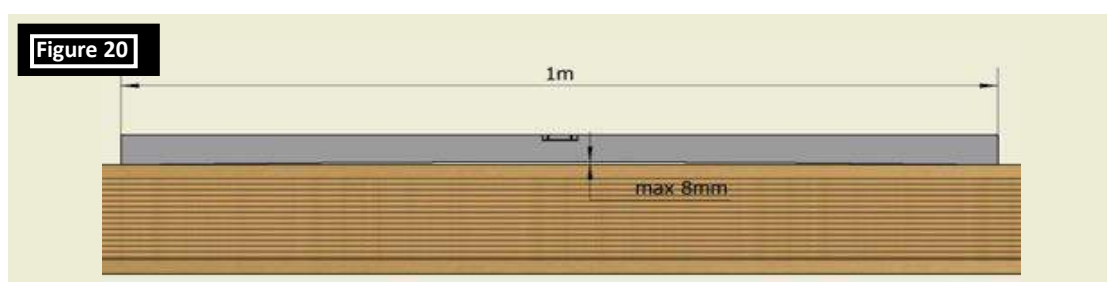
## 9. Changes due to climatic influence

**Green Plank Marine Solid Composite Board** consists of the high-quality wood-polymer composite (WPC). 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 wood-polymer composite (WPC) and do not represent defects.

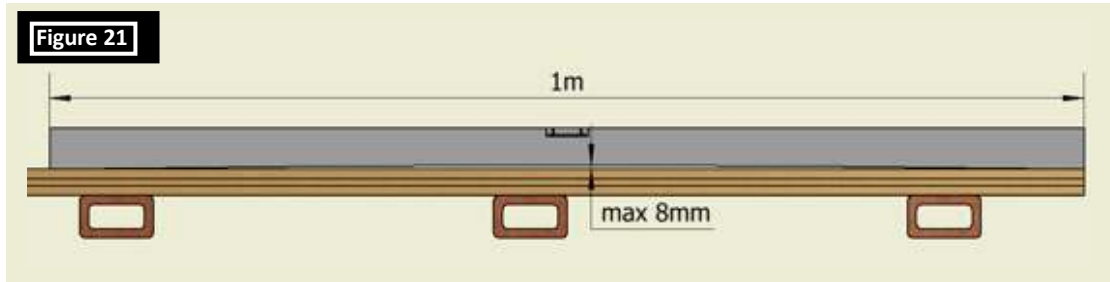
### 9.1 Longitudinal elongation

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.



### 9.2 Lifting up of the profile ends

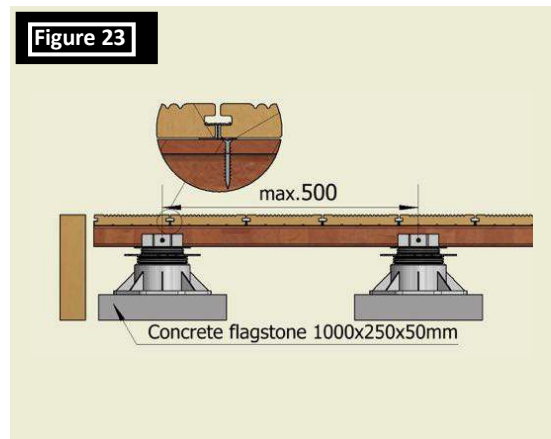
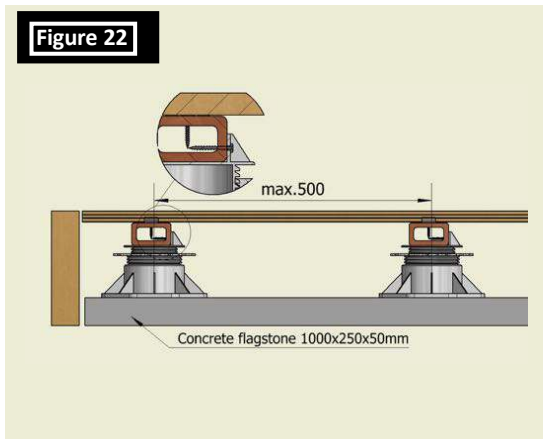
If a measuring stick with a length of 1 m is placed at the location with the most pronounced flaring, the largest permissible gap between the profile and the measuring stick is 8 mm.



### 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 22 and 23



### 11. Installation alternatives

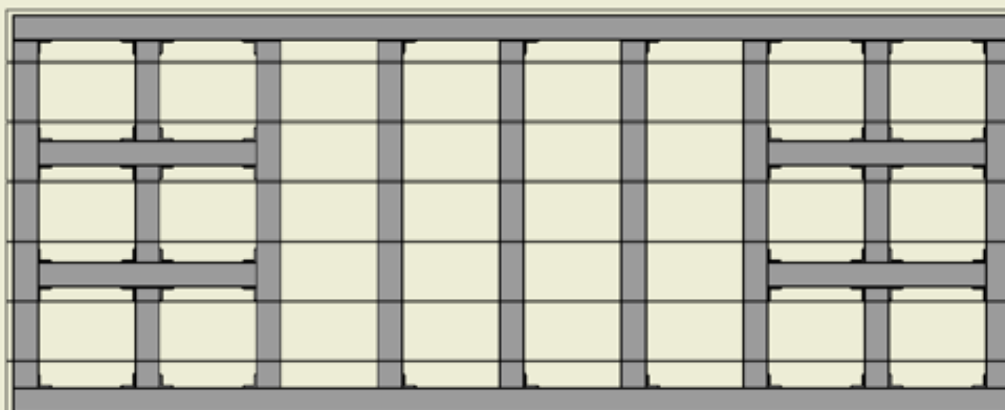
If it is not possible to attach the sub-framework to the ground, or in cases of low installation height, **Green Plank Marine Solid Composite Board** can also be laid on a frame structure (Figure 23) or a cross-batten framework (Figure 24).

Frame structure:

## Green Plank Composite Decking Solid Boards - Installation alternatives

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

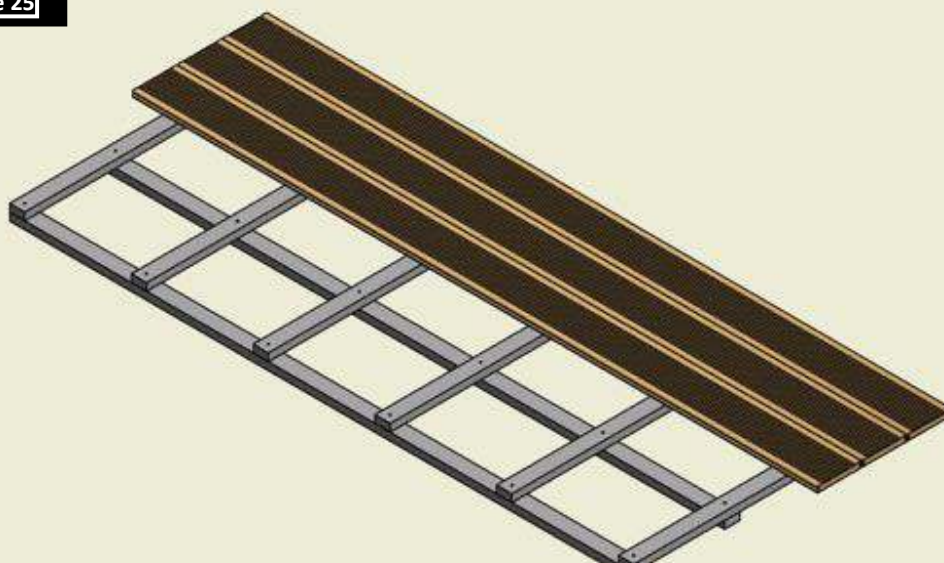
Figure 24



### 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 25



THE DIAGRAMS AND INSTRUCTIONS IN THIS GUIDE ARE FOR ILLUSTRATION PURPOSES ONLY AND ARE NOT MEANT TO REPLACE A LICENSED PROFESSIONAL. ANY CONSTRUCTION OR USE OF THE PRODUCT MUST BE IN ACCORDANCE WITH ALL LOCAL ZONING AND/OR BUILDING CODES. THE CONSUMER ASSUMES ALL RISKS AND LIABILITY ASSOCIATED WITH THE CONSTRUCTION OR USE OF THIS PRODUCT. THE CONSUMER OR CONTRACTOR SHOULD TAKE ALL NECESSARY STEPS TO ENSURE THE SAFETY OF EVERYONE INVOLVED IN THE PROJECT, INCLUDING, BUT NOT LIMITED TO, WEARING THE APPROPRIATE SAFETY EQUIPMENT. EXCEPT AS CONTAINED IN THE WRITTEN LIMITED WARRANTY, THE WARRANTOR DOES NOT PROVIDE ANY OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, AND SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING CONSEQUENTIAL DAMAGES.