



*materia infinita*<sup>®</sup>

# LAYING INSTRUCTIONS

REV\_09/23



## DECKING WITH NOVOWOOD SYSTEM

# LIST OF MATERIALS TO BE USED



## STAVES

cod. 145H22/145S22/197H22/197S22/145H23/145S23  
 AVERAGE USE per m<sup>2</sup>  
 3,15 Pcs/m<sup>2</sup> (~0,29 pcs / sq ft)  
 2,30 Pcs/m<sup>2</sup> (~0,21 pcs / sq ft)  
 1,72 Pcs/m<sup>2</sup> (~0,16 pcs / sq ft)

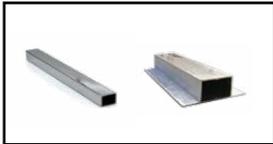


## NYLON or STEEL CLIPS

Clips nylon 5mm (~ 3/16 in) / clips inox 7/8mm (~ 5/16 in)  
 Clips inox 5mm (~ 3/16 in) / clips inox 3/4mm (~ 1/8 in)  
 (not available for nautico profile)  
 AVERAGE USE per m<sup>2</sup>  
 25 Pcs/m<sup>2</sup> (~ 2,48 pcs / sq ft)



## STARTER CLIPS (OPTIONAL)



## ALUMINIUM SUBCONSTRUCTION FRAMEWORK JOISTS

cod. ALU / 80H25  
 AVERAGE USE per m<sup>2</sup>  
 3.50 m/m<sup>2</sup> (~ 1 13/16 in / sq ft)



## RUBBER PAD (OPTIONAL)



## NOVOSTRIP

AVERAGE USE per m<sup>2</sup>  
 0.50 m/m<sup>2</sup> (~ 1 ft 13/16 in / sq ft)



## PVC JACK SUPPORT (OPTIONAL)



## N.B. HUE VARIATIONS OF DIFFERENT LOTS

Novowood is a wood plastic composite produced by extrusion, therefore it is possible to have little hue variations between different lots produced. It is advisable to lay the material picking up staves from different pallets.

# IMPORTANT NOTES

## INFORMATION ON OVERLOAD



Floors constructed with Novowood staves, both filled and hollow core, combined with joists and fixed with Novowood Clips, laid with joists with a spacing of 35cm (~1ft 2in), are designed to support accidental overloads with resistance to distributed loads equal to 500 kg/m<sup>2</sup> (~102 lb / sq ft). In case of big loads on the decking and in all the public spaces, it is necessary to lay the joists with a maximum spacing of 30 cm (~11 13/16 in).

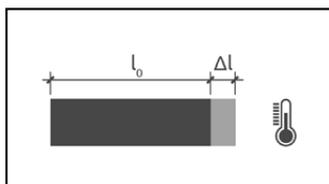
## CORRECT USE OF THE MATERIAL



Novowood products are aesthetic materials that, despite their mechanical strength characteristics, must always be laid on a supporting subconstruction framework of a suitable size.

In public spaces, on poolsides and in all the realizations with relevant peculiarities, the use of solid profiles is necessary.

## THERMAL EXPANSION



Wood plastic composite is subject to slight thermal expansion due to the presence of a small amount of HDPE plastic in its mix. The expansion index defined in the data sheet is equal to **0.04 mm/m/°C**. It is therefore recommended to calculate the grouting between the staves heads according to external temperatures during laying and to the annual thermal variation forecast.

## VENTILATION AND AIRSPACE



It is essential to ALWAYS leave an airspace between the staves and the supporting surface to allow ventilation. In addition to the use of a proper subconstruction framework it is necessary to avoid interferences between the airspace and edges or barriers that block a proper ventilation under the profiles. In case of hollow profiles it is recommended to make sure that there is no stagnant water inside the hollows.

# STEP BY STEP DECKING INSTALLATION GUIDE

## 1 SUBSTRATES

Before installing the decking the substrate must be prepared correctly with a suitably sized subconstruction framework able to withstand the design loads.

### 1.1 Types and preparation of substrates

#### CONCRETE SUBSTRATE



Laying on a levelled concrete substrate is the best solution in terms of both speed and durability. It is necessary to make sure that the slope allows the drainage of water.

#### ■ BEST OPTION

#### GRASS SUBSTRATE



Laying on soil or grass should be done only with specialized installers able to form a suitable subconstruction framework to allow ventilation and avoid direct contact with the base. To prevent the growth of grass between the staves, the application of geotextile is recommended.

#### SAND SUBSTRATE



Laying on a sand substrate is only possible by using a raised subconstruction framework which gives the required ventilation and avoids direct contact with the sand base.

#### SUBSTRATE ON LOAD-BEARING STRUCTURES



Laying on load-bearing structures must be done by constructing a subconstruction framework able to withstand the design overloads. The decking support layer must consist of joists spaced at the intervals specified in the Novowood data sheet or possibly of proper metal grills.

#### GRAVEL SUBSTRATE



Laying on a gravel substrate should be done with specialized installers able to form a suitably compact and durable flat surface.

#### WATERPROOF COATING SUBSTRATE



In case of waterproof coating it is mandatory to use rubber pads or PVC jack supports. It is also necessary to create a double subconstruction framework.

#### NOTE FOR EVERY TYPE OF SUBSTRATE



The substrate must always be prepared in a way that allows water to flow out because the material must not be kept in direct contact with it for an extended period.

In case of application on non-regular substrates, it will be necessary to consider the use of frameworks or substructures with 2 layers, which limit the possibilities of structural failure and favour the ventilation under the material.

### 1.2 Levelling of uneven or sloping screed substrates

Levelling of the surface is done in the case of uneven surfaces, when project quotas must be followed, or to correct a sloping underlying screed.

This can be done with rubber pads or adjustable jacks to obtain a perfectly flat surface.

The installer is responsible for the proper use and application of these elements; incorrect preparation of the substrate could result in damage to the decking.



Rubber pad 65 x 65 mm  
(~ 2 5/16 in x 2 5/16 in)



PVC Jack Support

## 2 SUBCONSTRUCTION FRAMEWORK JOISTS

The use of aluminium subconstruction framework joists is mandatory. They must be installed in full compliance with the installation instructions on the present manual. It is compulsory to fix the joists to the substrate with suitable fixings (see point 4) and/or to realize a double subconstruction framework.

### CAUTION

Wood plastic composite is subject to slight thermal expansion (0.04 mm/m/°C). Ensure that recommended distances are observed.



Omega subconstruction framework joists 80 x 25,5 mm (~ 3 3/16 in x 1 in)



Aluminium subconstruction framework joists (Best solution)

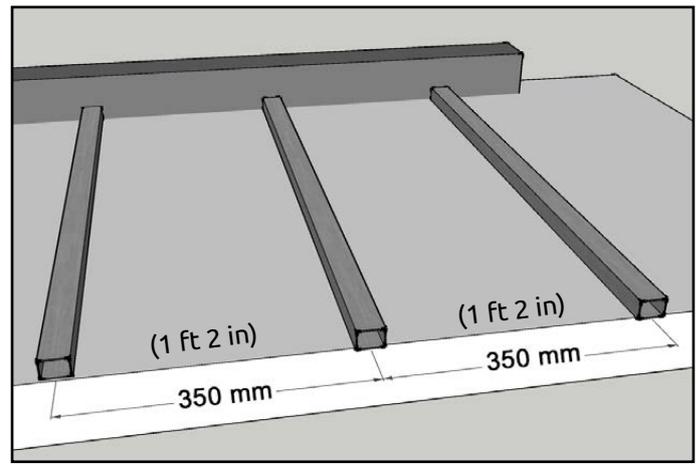
### 2.1 Laying the joists

#### 1 DISTANCE BETWEEN JOISTS

Remember to never exceed the 350 mm (~1 ft 2 in) spacing between joists to avoid excessive inflections.

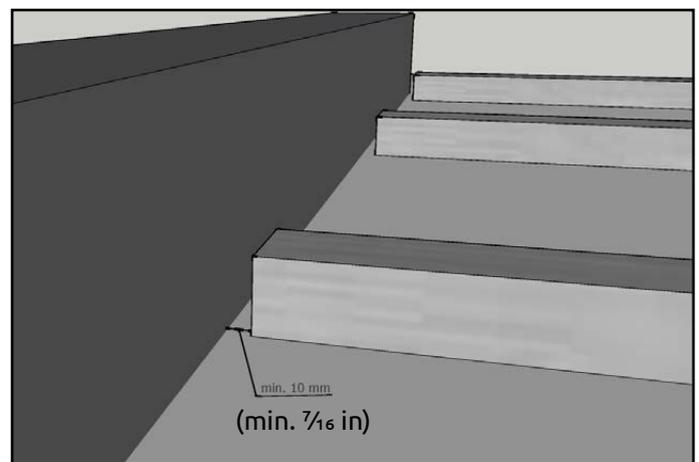
### CAUTION

You should always be aware of the floor's intended use and its operating loads. In case of doubt, reduce the distance between the Novowood joists to increase the resistance to inflection of the staves.



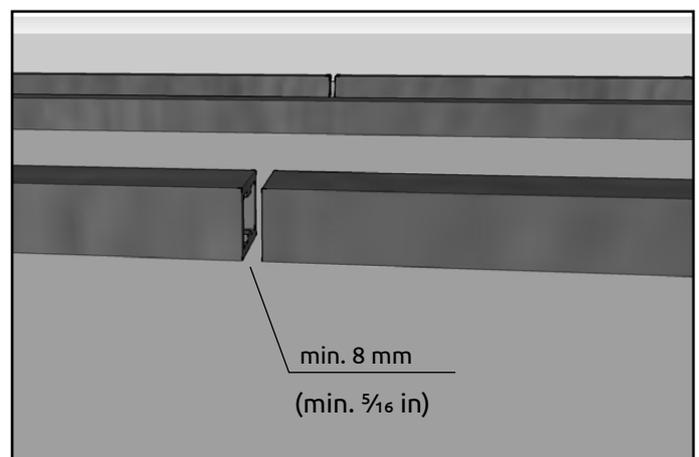
#### 2 POSITIONING JOISTS AGAINST A WALL

Maintain a minimum distance of 10 mm (~7/16 in) between the wall and the subconstruction framework joists.



#### 3 POSITIONING OF ADJACENT JOISTS

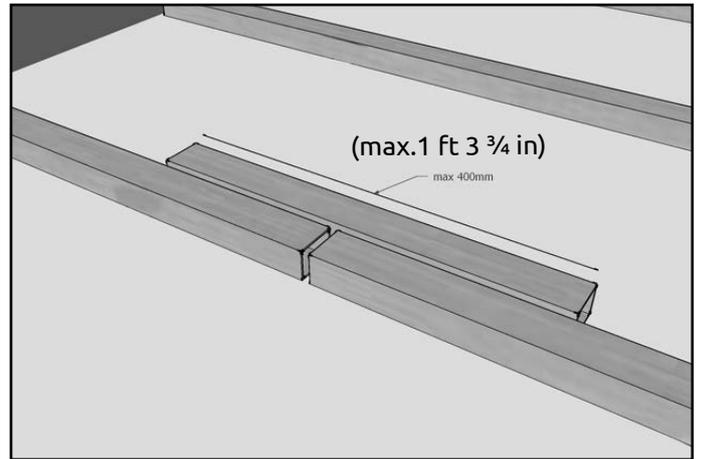
Maintain a minimum distance of 8 mm (~5/16 in) between two adjacent joists.



## 4 CONTINUITY JOIST

To give continuity and solidity to the entire structure, position an additional joist of approximately 400 mm (~1 ft 3 ¾ in) in the intersection of the 2 adjacent currents, as shown in the picture.

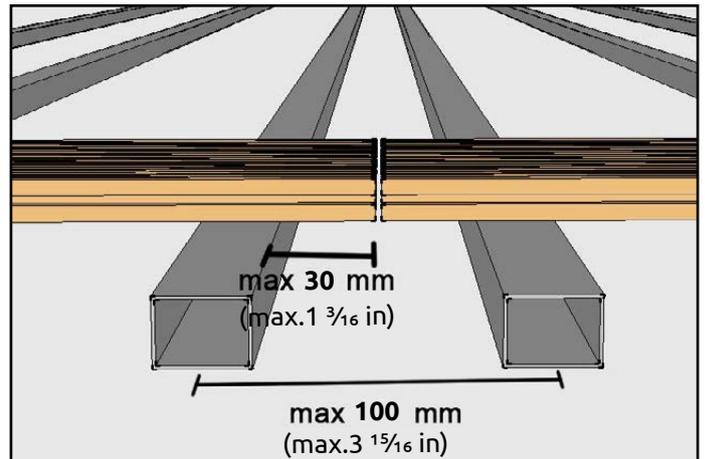
This continuity joist is then attached to the slats with a double clip.



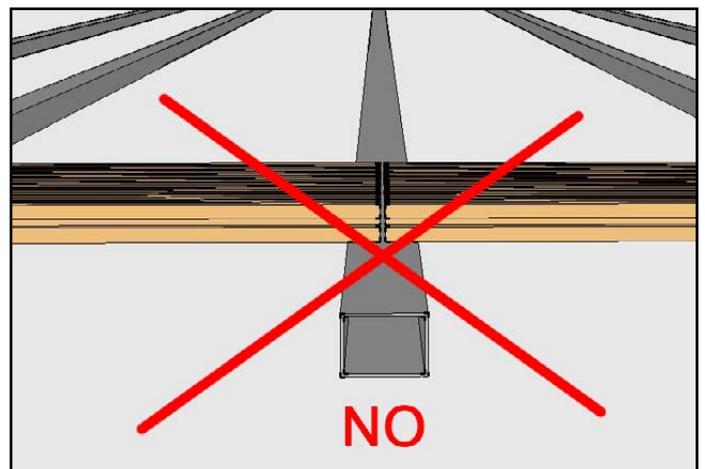
## 5 JOISTS BETWEEN TWO ADJACENT STAVES

Between 2 adjacent staves, position 2 joists with a maximum spacing of 100 mm (~ 3 15/16 in).

The maximum overhang of a stave positioned on a joist is 30 mm (~ 1 3/16 in).



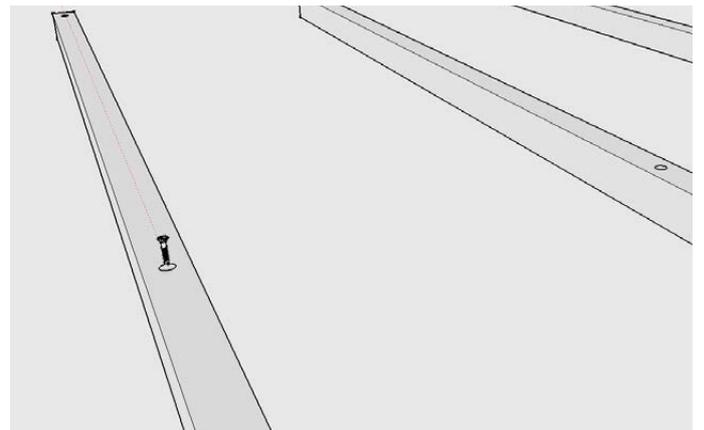
Do not use a single joist under two adjacent staves.



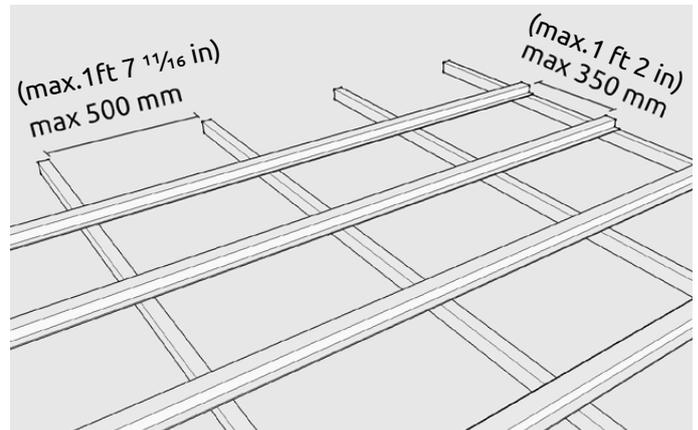
## 6 ATTACHING THE JOISTS TO THE SUBSTRATE

It is mandatory to attach the joists to the substrate in order to achieve further solidity.

The joists can be attached to the support base, in concrete for example, with L brackets; we recommend using a single bracket positioned in the middle section of the joists so it can expand. The joists can also be attached using percussion anchors suitable for the substrate.



In case of waterproof coating it is necessary to create a double subconstruction framework (for further information please contact Novowood technical office).



## 7 NOVOSTRIP

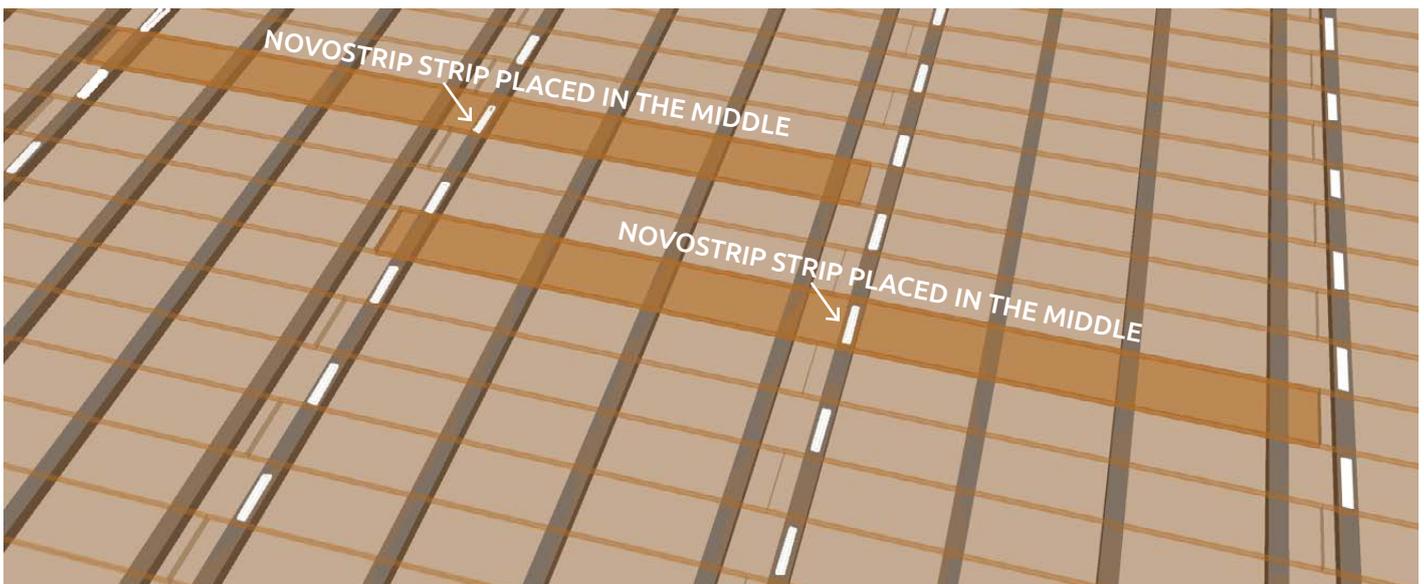
Novostrip is a special butyl tape to be applied between the joist and the stave to reduce their longitudinal slippage. It is installed by applying a 10 cm (3 15/16 in) strip on the joist closest to the middle section of the stave, as shown in the picture.

Remember that it must be applied on every stave in the decking.



Novostrip

- NOVOSTRIP tape
- Highlighted staves



## 3 STAVES

Novowood staves can be laid on either side, depending on the choice of design.



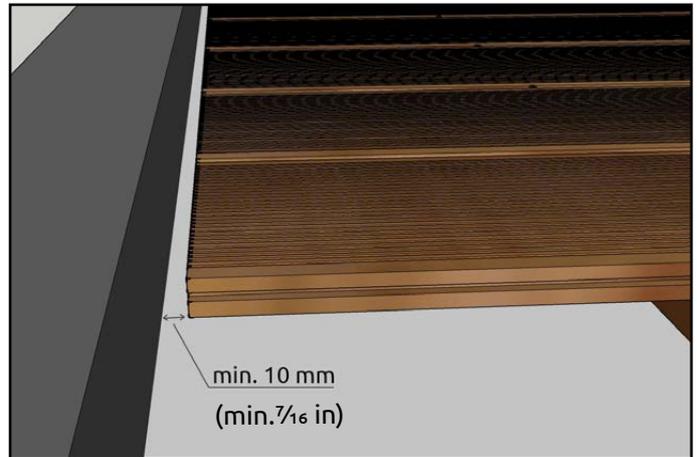
### CAUTION

Wood plastic composite is subject to slight thermal expansion (0.04 mm/m/°C). Ensure that recommended distances are observed.

### 3.1 Laying of staves

#### 1 STAVE DISTANCE AGAINST A WALL

Maintain a minimum distance of 10 mm (~ 7/16 in) between the wall and adjacent staves.



#### 2.a INITIAL STANDARD CLIP POSITIONING

Position the nylon clips on the head joists, screwing them partially.



### CAUTION

Check the squaring by positioning a stave before final clip fixing.



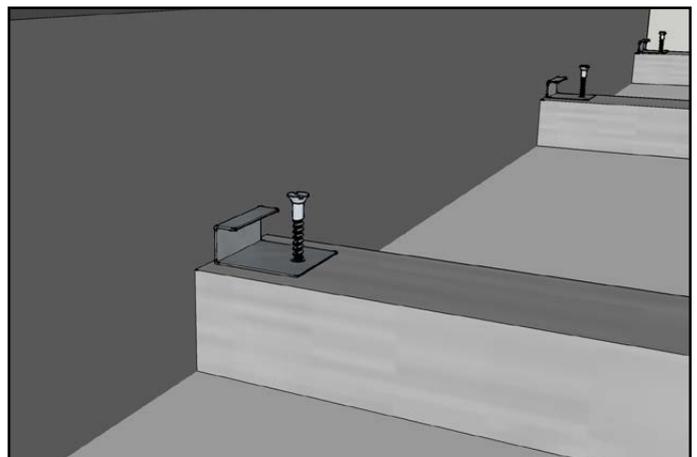
#### 2.b (OPTIONAL) START-FINISH CLIP POSITIONING

Screw the start-finish clips onto the joist heads and determine their starting alignment.



### CAUTION

Check the squaring by positioning a stave before final clip fixing.



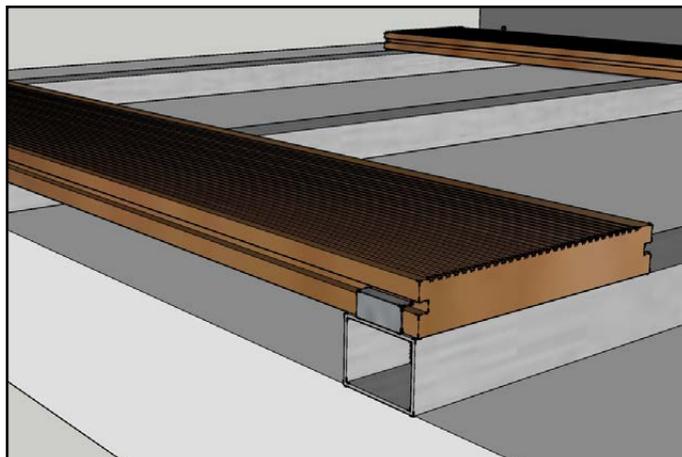
### 3 FIRST STAVE POSITIONING

Position the first stave and insert it into the screwed in clips.



#### CAUTION

Pay particular attention to the orientation of this stave as all the subsequent ones will follow the same direction.



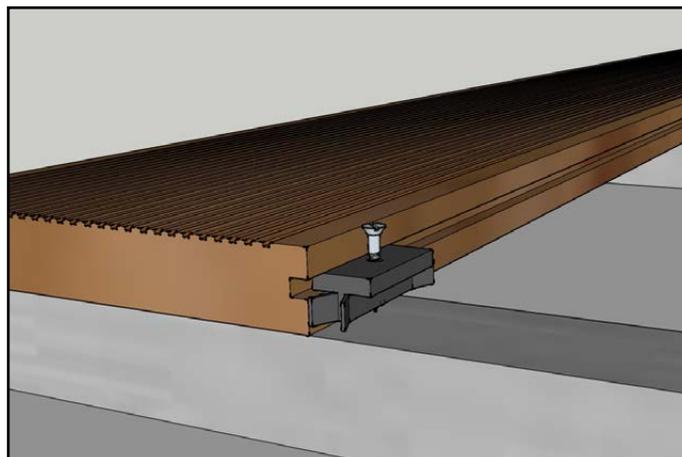
### 4 CLIP POSITIONING

Position the entire row of clips, screwing them only partially onto the joists, as shown in picture



#### CAUTION

The second row of staves must be positioned before final clip fixing.



### 5 SECOND STAVE POSITIONING

Position the second stave, position the new row of clips screwing them only partially and then tighten the previously attached clips, between the two staves



## 6 COMPLETING INSTALLATION

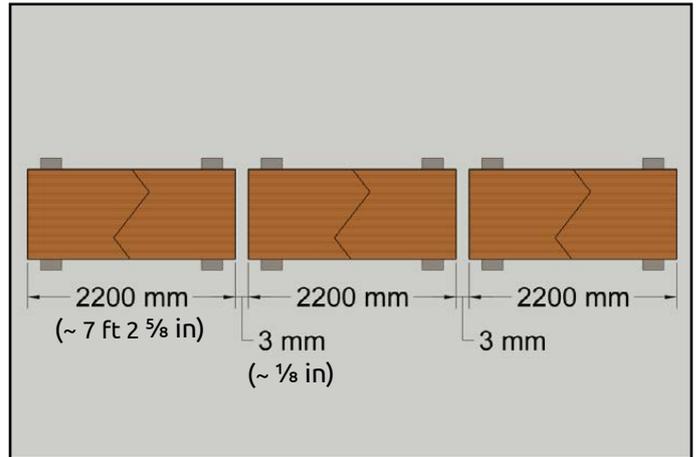
Repeat steps 4 and 5 until the area to be covered is complete.



## 7 POSITIONING ADJACENT STAVES

Leave a space of at least 3 mm between two adjacent staves to allow the natural thermal expansion of the wood plastic composite. The distance between the staves depends on the outside temperature during laying.

- Laying at **10°C (50°F)** = distance **4 mm (~ 3/16 in)** for staves with a length of 2,200 mm (~7ft 2 5/8 in).
- Laying at **20°C (68°F)** = distance **2 mm (~ 3/16 in)** for staves with a length of 2,200 mm (~7ft 2 5/8 in).
- Laying at **t<sub>max</sub>** = distance **0 mm (0 in)** for staves with a length of 2,200 mm (~7ft 2 5/8 in).

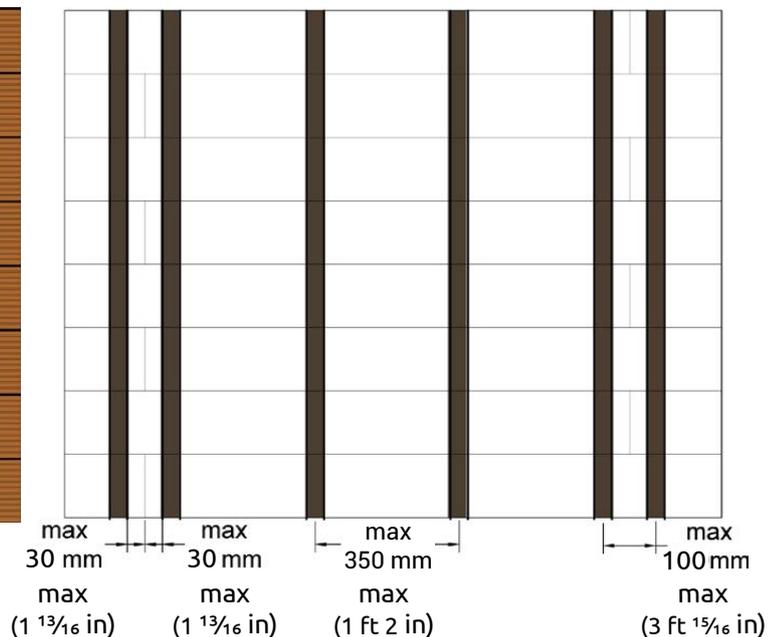
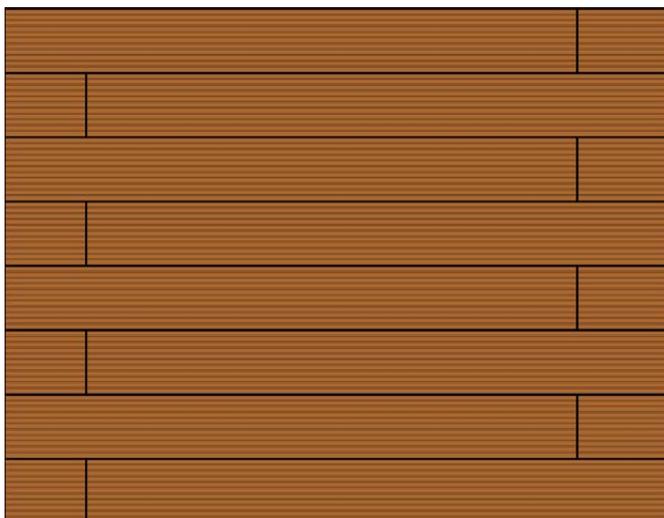


## 4 LAYING INSTRUCTIONS

To lay the decking correctly, you should follow these instructions:

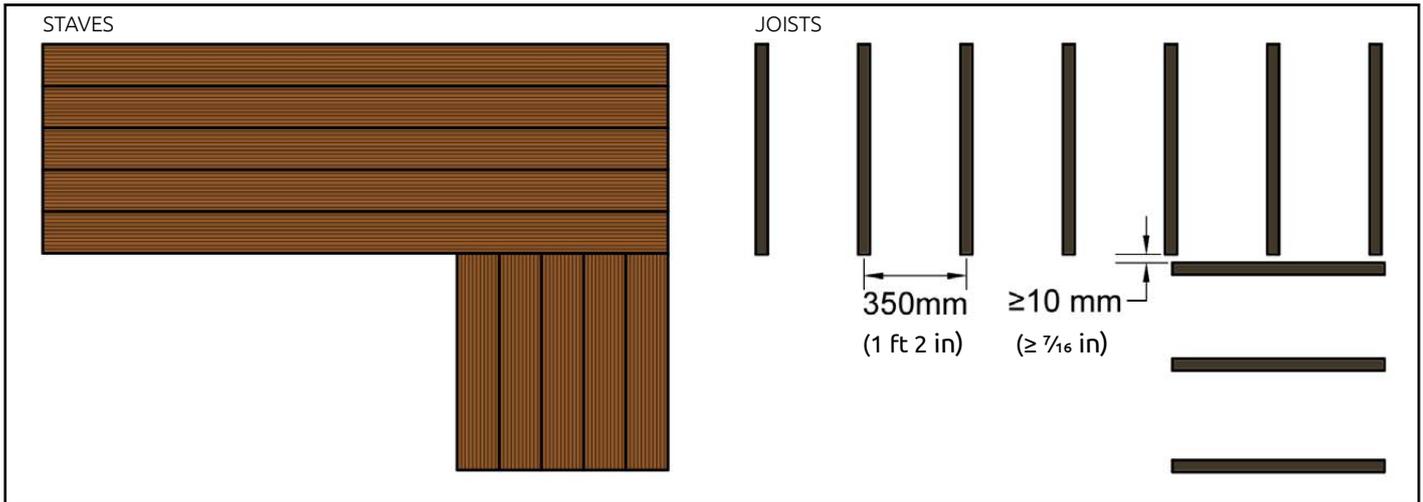
- The ideal distance between joists is 350 mm (~1 ft 2 in) (able to withstand accidental loads of 500 Kg/m<sup>2</sup> (~ 102 lb / sq ft).

- Between 2 adjacent staves, position 2 joists with a maximum spacing of 100 mm (~3 15/16 in). The maximum overhang of a staff positioned on a joist is 30 mm (~1 13/16 in).

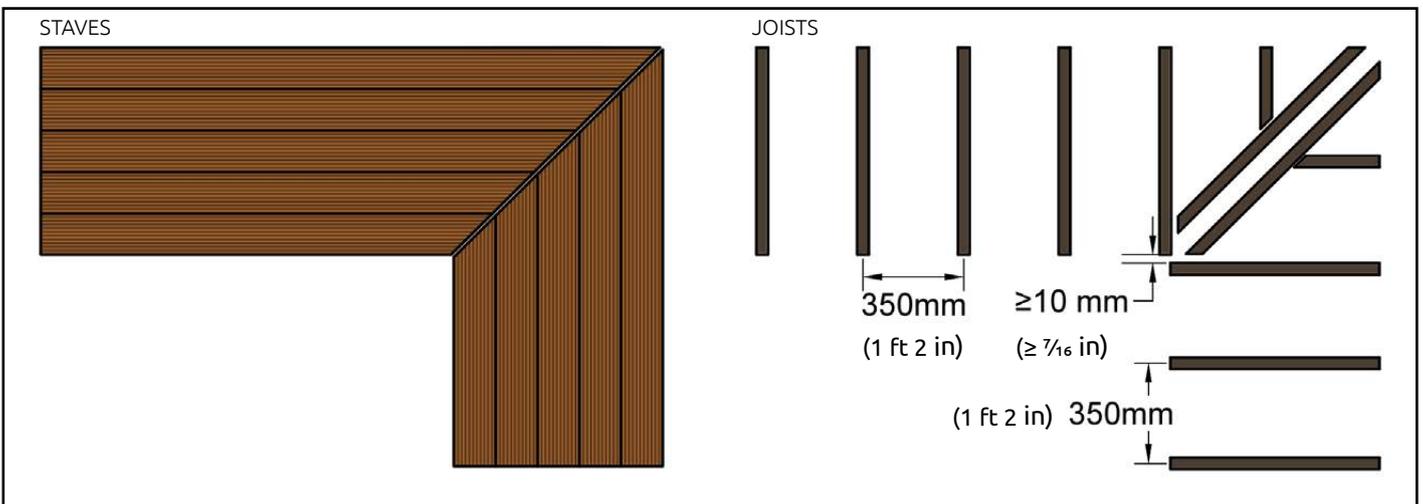


## 5 STANDARD LAYING SOLUTION

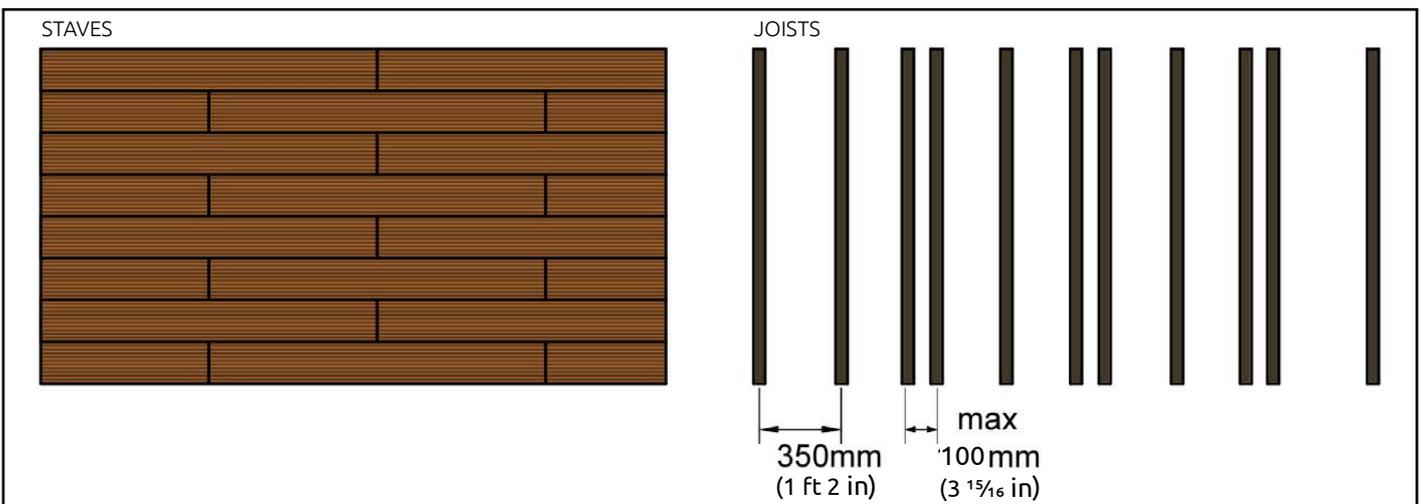
### Model with junction



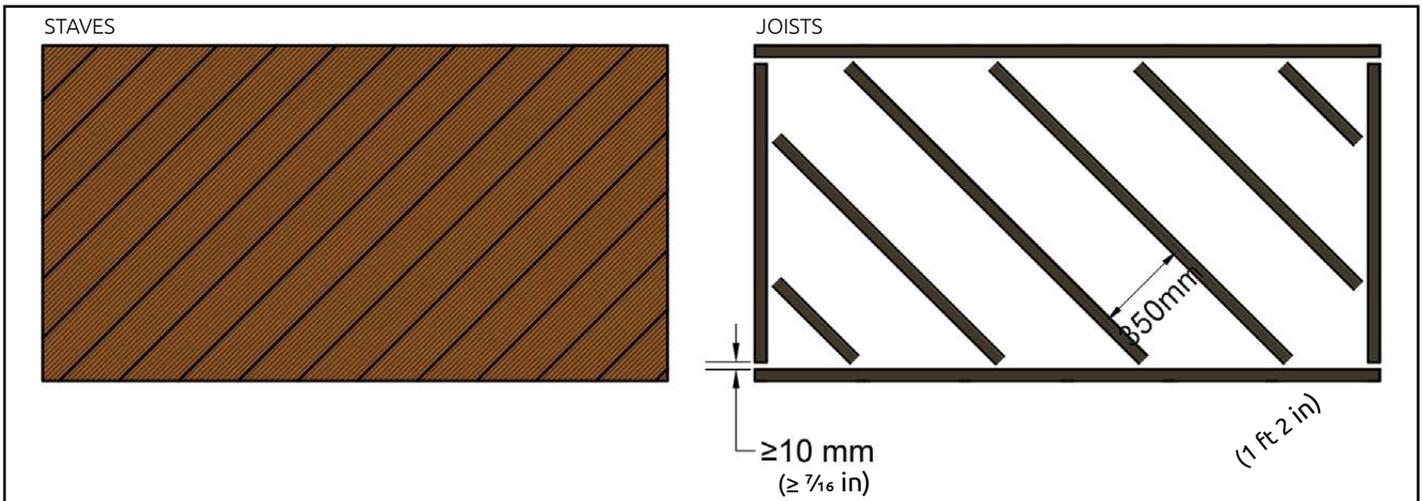
### Model with diagonal cut



### Model with random lengths



## Model with 45°



## 6 WASTAGE

Wastage varies depending on the geometry of the project. A regular shape, for example a square or a rectangle, will produce less waste, while a complex shape with a high number of joints, angles or irregular shapes, will produce more waste.

In general, it is estimated to be between 5-10%.

## 7 MAINTENANCE AND CLEANING

Novowood wood plastic composite does not require special maintenance and it is easy to clean thanks to the studied combination of fibres, polymers and additives. In order to reduce the accumulation of residues on the surface it is advised to wash the Wood Plastic Composite monthly with cleaning products (supplied on request) and in order to maintain the warranty it is necessary to provide at least one annual cleaning with "WPC Cleaner" (supplied on request). If you use the pressure washer, keep the nozzle at a distance of 30 cm (~ 11 13/16 in) from the floor.

The accumulation of organic material on the surface, with the passage of time, may form localised moulds which can be removed using hot water and "WPC Cleaner". If moulds, algae and fungi have settled

for a long time, often the material needs further treatment.

However, the inconvenience can be reduced by keeping the decking clean, dry and ensuring good ventilation.

In areas particularly susceptible to the formation of stains and marks (bars, restaurants, etc.), we recommend the application of the "WPC Shield" protective product (supplied on request) in order to reduce the absorption of stains from external agents.

In order to remove localized stains it is advisable to use a special spray "WPC stains remover" (supplied upon request) which may produce a slight hue change in the intervention area.

## INFORMATION ON NOVOWOOD'S LIABILITY

The distances to be observed and the method of installation can be evaluated according to the needs of the client and the contractor during laying. The company does not assume any liability for negligence in the installation of NOVOWOOD products.

Please check possible updates of the manuals on the website [www.novowood.it](http://www.novowood.it) in the download section.







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