



**DECKING
INSTALLATION
PROTOCOL**



RESPECT FOR THE ENVIRONMENT

CHAIN OF CUSTODY

We are a company that takes our future and that of the planet very seriously. That is why we work towards guaranteeing reforestation and environmental care, safeguarding the future of the forests and their wood. **WE ADHERE TO THE CHAIN OF CUSTODY STANDARD** in line with EUTR regulations.

EUROPEAN REGULATIONS

Our wood is purchased under the permits required by the official competent agencies in each country of origin and adhering to Due Diligence System of AEIM (Spanish Timber Trade Federation's), thus complying with the European Union Timber Regulation (EUTR).

FSC CERTIFICATE

Our activity is subjected to regular evaluations, certifying our adherence to the Forest Stewardship Council's chain of custody system. Licence Code: *FSC-C015217*.





Any type of installation must be performed with the corresponding **personal protective equipment**, using machinery bearing the **EC mark**, and following the manufacturers' instructions for use.

The machinery must only be used by qualified, trained and authorised staff, following the relevant Occupational Risk Prevention protocols.

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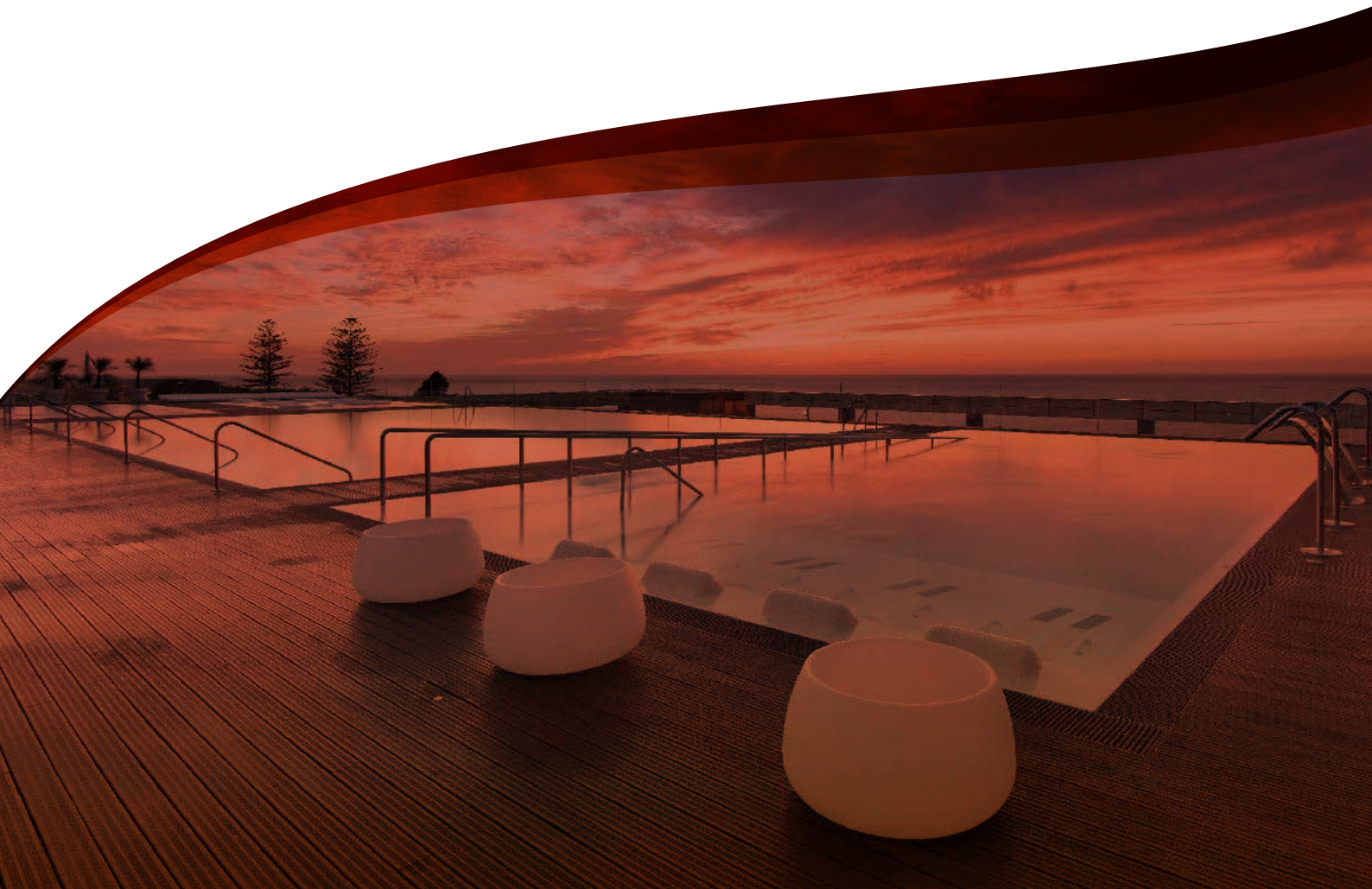
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1.1 EXTERNAL CONDITIONS THAT AFFECT THE WOOD

The following basic considerations should be taken into account before installing outdoor wood flooring:

- **the climatic conditions of the area**, especially the incidence of direct sunlight and the average seasonal humidity.
- **xylophagous external agents** such as fungi and insects.
- **slipperiness**: public transit.



1.2 SLIPPERINESS

Depending on the usage class of the flooring, the Spanish Technical Building Code (CTE) requires a specific slip resistance.

For flooring installed in outdoor areas or swimming pools, the maximum slip resistance value is required (Rd>45), corresponding to usage class 3. The CTE also specifies that said usage class must be maintained throughout the entire service life of the flooring.

In order to obtain the Rd value, a test must be conducted in compliance with Spanish standard UNE-EN-V12633:2003 with the flooring in final usage conditions. The slipperiness of the flooring will depend on actions that it undergoes subsequent to our manufacturing, such as sanding (depending on the grain size used) and the application of oils or wood stains.



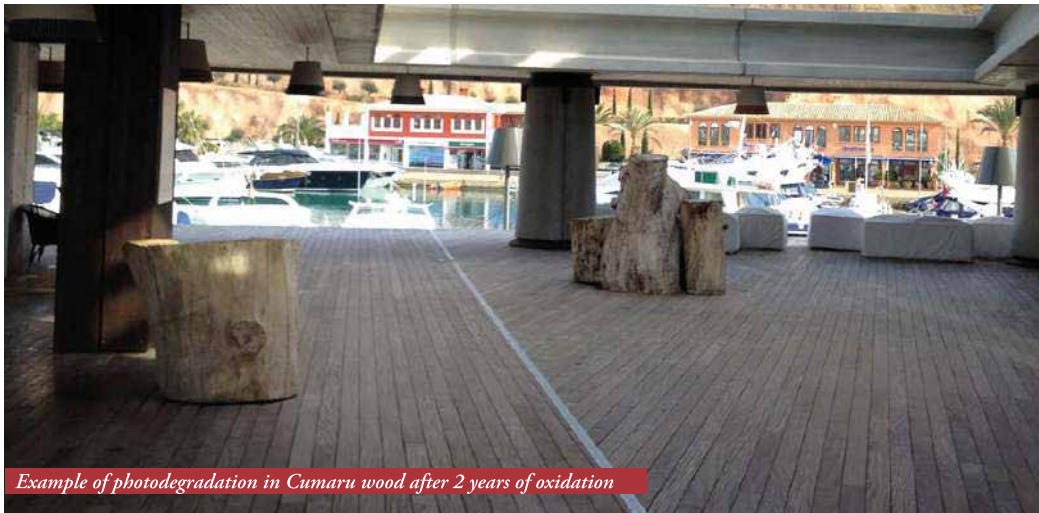
In any case, non-slip systems with continuous or mixed slotting must be used in order to reduce the slipperiness of the flooring when it is wet due to rainfall or splashing from pools, as recommended in Spanish standard UNE 56823:2008.

It is also essential to periodically clean the flooring to eliminate films of dust and even fungi formation, which increase slipperiness.

1.3 COLOUR AND DIMENSIONAL ALTERATIONS

Prolonged exposure of wood floorings to external weathering agents, especially the action of the sun and humidity, causes the wood's surface to take on a greyish tone.

This is a natural photodegradation process. Nevertheless, this phenomenon does not affect its long-term mechanical resistance, durability and performance: sanding the surface restores the wood's original colour. Also, **the use of oils and wood stains reduces alterations of this type.**



Example of photodegradation in Cumaru wood after 2 years of oxidation

Weathering agents also affect its dimensional stability, generating superficial checks that can be considered repairable if they remain within certain limits:

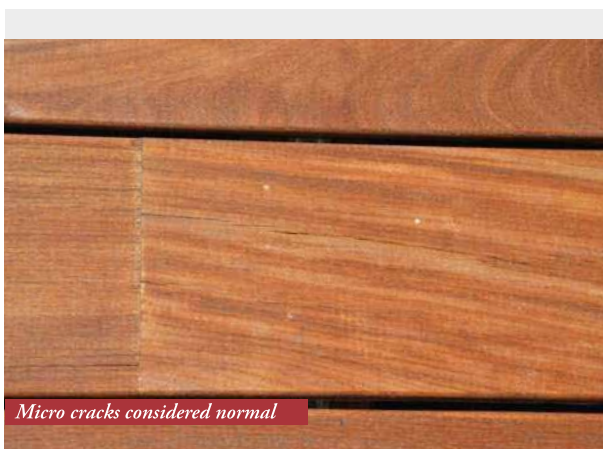
- Up to an individual length of 300 mm or up to the total length equivalent to one piece.

- Up to a width of 1 mm.
- Up to 1/3 of the depth of the board.

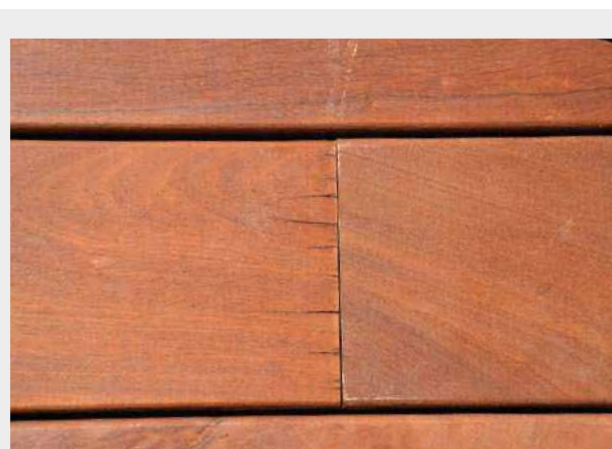
Alterations of this type **are reduced by periodically washing the flooring with water.**

There are other types of deforma-

tions that require the replacement of a piece, such as checks extending between two surfaces, splintering, ring shakes, etc.



Micro cracks considered normal



2.1 CHOICE OF SPECIES

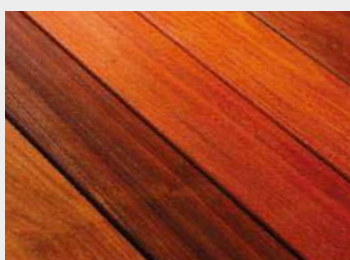
The choice of species must focus on two main characteristics: **natural durability and dimensional stability**.

In accordance with Spanish standard UNE-EN 335-2:2007, the durability class must be at least 3 if the wood is separated from the ground (floating) and 4 if the wood is directly in contact with the ground (fixed).

Depending on the climatic and hydrographic conditions of the location where it is to be installed, different types of wood are

recommended. Ideally, the wood installed should have a hygroscopic balance and humidity content in between those of the driest and the most humid season.

In Spain, a humidity content between 12% and 14% is established for the inland regions of the Iberian Peninsula. However, north of the Cantabrian Mountains and on the Mediterranean coast and insular areas, a value between 14% and 16% is established.



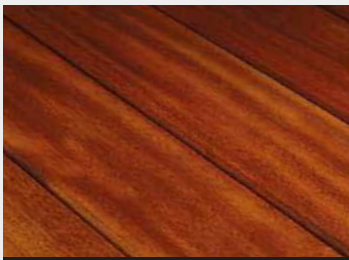
IPE



IROKO



CUMARU



ELONDO



ACCOYA

RECOMMENDED SPECIES
FOR OUTDOOR WOOD
FLOORING:

2.2 SUPPORT CONDITIONS

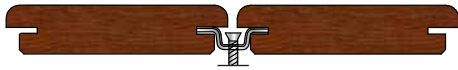
The support for installation of wood floors must be clean before beginning installation work, and its resistance must be suitable for the anchorage system of the battens.

The type of support recommended is cement mortar **sloping with a gradient between 2% and 5% to prevent the accumulation of water**, placing the battens in parallel to facilitate drainage.

3.1 FORMATS AND PROFILES FOR INSTALLATION

		F O R M A T S		
		SMOOTH	NON-SLIP No. 1 (AD1)	NON-SLIP No. 2 (AD2)
P R O F I L E S	VISIBLE FASTENERS (HH)			
	HIDDEN FASTENING (FO)			
	SCREW (S4S E4E) <i>* Reversible option</i>			

PROFILE TYPES



PROFILE WITH VISIBLE FASTENERS (HH)

- Female-female tongue-and-groove joint for installation with fasteners.
- Head tongue-and-groove joint.



PROFILE WITH HIDDEN FASTENING (FO)

- Female-female tongue-and-groove joint with tab, for installation with fasteners.
- This profile does not allow the re-tightening of the flooring one year after installation. ** See post-installation recommendations (5.1).*
- Head tongue-and-groove joint.



SCREWING PROFILE (S4S E4E)

- Four-face planing. Four R6 bevelled edges. Two smooth sides.
- Centred head tongue-and-groove joint; reversible profile.



NON-SLIP (AD2) SCREWING PROFILE (S4S AND E4E)

- Four-face planing, four R6 bevelled edges, one smooth side and one No. 2 non-slip side.
- Centred head tongue-and-groove joint. Reversible profile.
- Two installation positions: smooth or non-slip No. 2 format.

3.2 BATTENING CONDITIONS

• We recommend **hard tropical wood**. In accordance with Spanish standard UNE-EN 350-2, the durability of woods for battening must be greater than or equal to 4.

• Their density must be greater than or equal to **650 kg/m³**, which favours the fastening of any mechanical attachment.

• Battens must have a cross section that is appropriate to the format (in terms of width and thickness) of the board that they will need to support. The minimum cross section of

battens is 50 x 30 mm.

- The maximum distance between batten axes for each type of flooring is 40 cm.

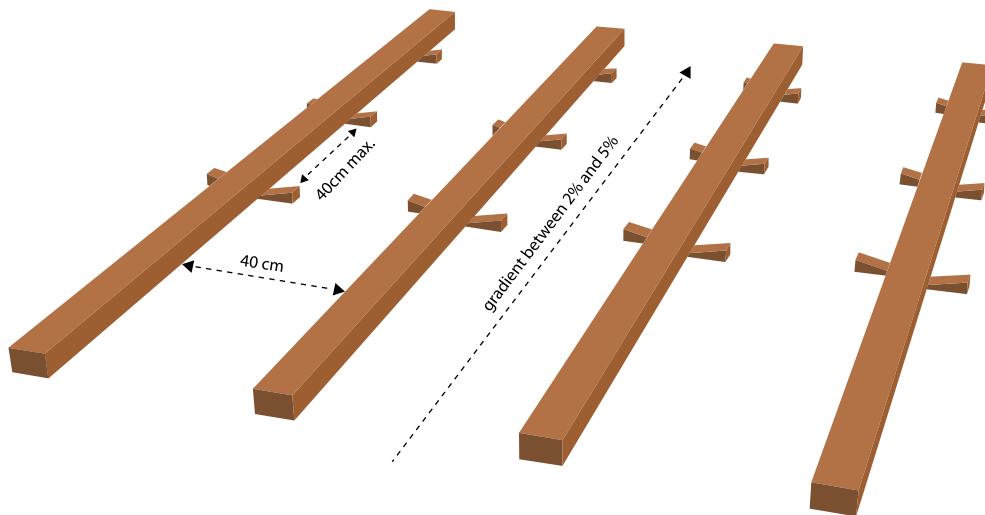
• Battens must be laid on the perimeter of the floored area to provide a support surface for the smaller-sized edgings.

• We recommend using AISI 316 L (A-4) stainless steel screws and fasteners.

• Each batten must be levelled and fastened to the support.

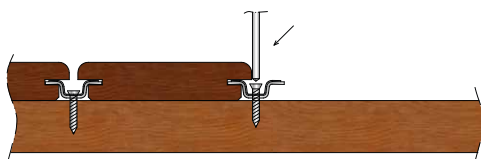
• If the battens need to be levelled owing to the poor planimetry of the support, or to level the drainage slope itself, this must be corrected with double wedges facing each other and in opposing directions; i.e. forming a rectangle between two triangles.

• They must be fastened to the batten with adhesive. The spacing between wedges must not exceed the spacing between batten axes.

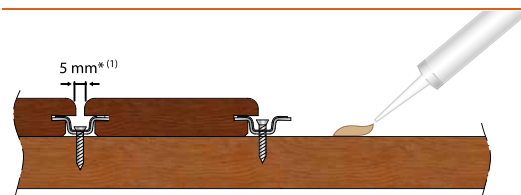


3.3 INSTALLATION SYSTEM WITH VISIBLE FASTENERS (HH)

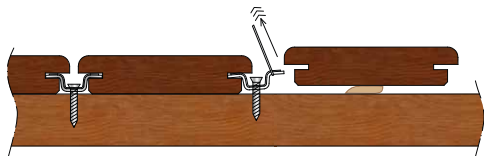
1 Place the clip with the screw, without tightening.



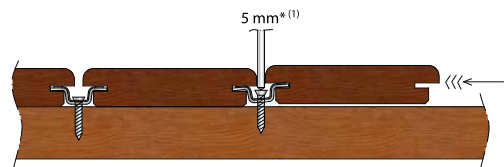
2 Apply a flexible spot of adhesive, such as Sikabond 152 or similar, on the batten.



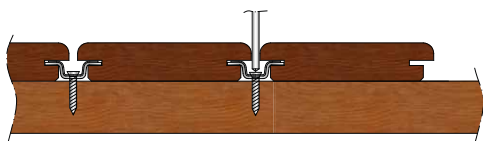
- 3 Bring the next board into place.



- 4 Fit this new board in place by gently hitting it from the side using a 5 mm spacing stop.



- 5 Screw in, overcoming the pressure exerted by the fastener wings, until reaching the batten.



- 6 Apply a small amount of adhesive, such as Würth Multikraft or similar, on the heads.

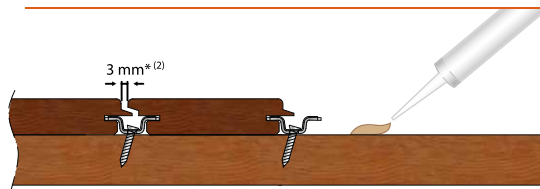


3.4 INSTALLATION SYSTEM WITH HIDDEN FASTENING (FO)

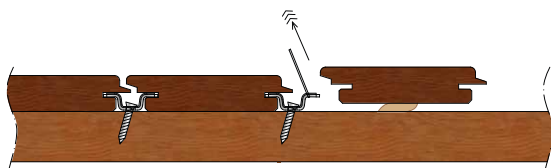
- 1 Place the wooden board with the screw, tightening the latter fully.



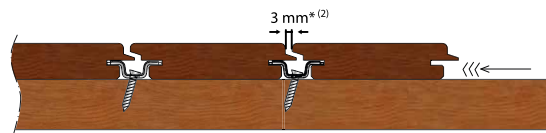
- 2 Apply a flexible spot of adhesive, such as Sikabond Parquet 52 or similar, on the batten.



- 3 Slightly lift the fastener using a hook and bring the next board into place.



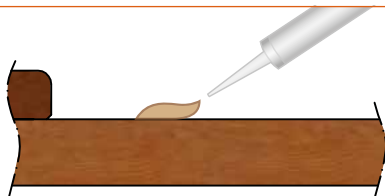
- 4 Fit this new board in place by gently hitting it from the side using a 3 mm spacing stop.



- 5 Apply a bead of rigid adhesive, such as Würth Multikraft or similar, on the heads.

3.5 INSTALLATION SYSTEM BY SCREWING (S4S E4E)

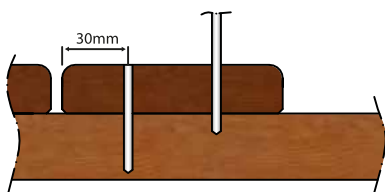
- 1 Apply a flexible spot of adhesive, such as Sikabond Parquet 52 or similar, on the batten.



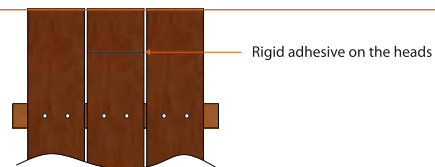
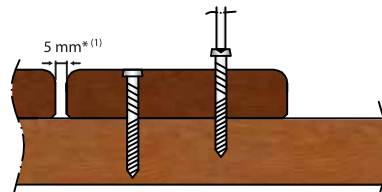
- 2 Bring the next board into place, with spacing of 5 mm, using a gauge.



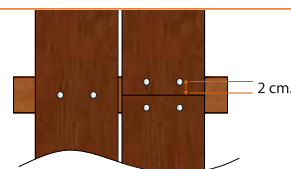
- 3 Pre-drill the board and the batten using a 4.5 mm drill bit 30 mm from the edges.



- 4 Fit this new board in place using a 5 mm spacing stop.



- 5 Apply a bead of rigid adhesive, such as Würth Multikraft or similar, on the heads.



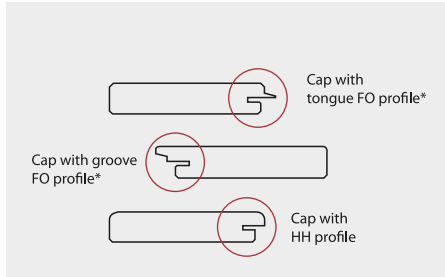
- 6 If screws need to be placed close to the end of the board, leave a minimum spacing of 2 cm.

** Due to changes in ambient humidity and the hygroscopic nature of wood, movements that modify the spacing between installation boards are normal. You will typically see:*
 (1) spacing between boards of +/- 3 mm in winter and +/- 7 mm in summer.
 (2) spacing between boards of +/- 1 mm in winter and +/- 5 mm in summer.

3.6 DECKING ACCESORIES DESIGNED FOR DECORATION.

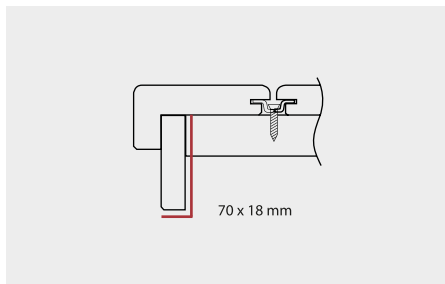
Caps

- Our standard for hidden fastening (FO) profile is tongue
- Please query for delivery time in the case of groove profile.



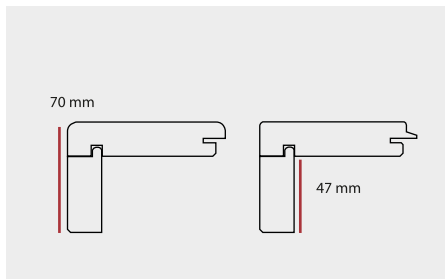
Gables

- The timbers in which they are manufactured are: Ipe, Iroko, Elondo and Cumaru.
- The standard cross section is 70 x 18 mm



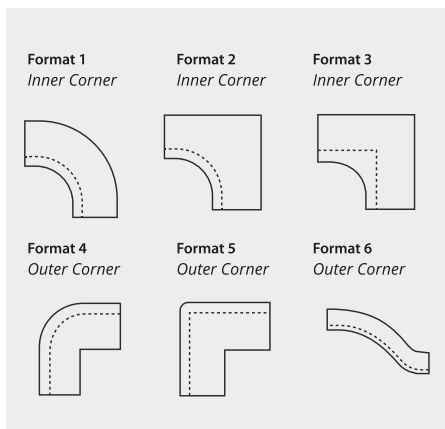
Nosings

- All the nosings with a drop of 70 mm and over are made up of two pieces glued with Würth Multicraft adhesive.



Curves

- Curves with a radius longer than 400 mm are manufactured. Please query price and delivery time.
- All the curves are made up of two pieces glued with Würth Multikraft Adhesive.



4.1 EXAMPLES OF POOR INSTALLATION



Why is that we can have two installations close to each other, using the same species of wood, the same profile and the same format, yet one looks great and the other pitiful?

“The problem is in the wood!” is always the first response.

The overwhelming majority of problems in outdoor wood flooring are caused by poor installation and incorrect use of materials.

The installation is the base that supports the wood flooring and it is the maintenance of the former which guarantees the good appearance of the latter.

The following are the factors which lead to failure:

- Excessive spacing between batten axes.
- Low-density battens.
- Poor anchorage of the batten to the screed.
- Unsuitable screws and fasteners (we do not recommend using plastic fasteners).
- Installation without end grain adhesive.
- Installation without adhesive between the batten and the flooring.
- Flooring with average humidity above 18%.
- Poor maintenance.

An poor choice of battens, fasteners or screws; installations without adhesives; or flooring with a high degree of humidity and poor machining are sure paths to failure.

4.2 EXAMPLES OF GOOD INSTALLATION

Wood is a product that has been used for many years on outdoor flooring. In the past, many installations used woods from the area where the flooring was being installed. Bearing in mind that the passage of time tends to deteriorate them more than any tropical wood currently used, they still look good today. In conclusion, the problem in installations of this type is not the wood.

Many installers of this type of floorings have had to modify their work habits to apply new methods and products.

The use of tropical wood battens, stainless steel fasteners and screws, the corresponding adhesives, flooring with the correct drying and appropriate machining, together with straightforward maintenance procedures, will suffice to keep outdoor wood flooring in good condition.

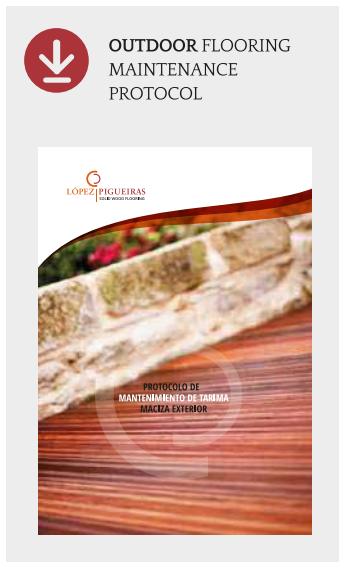


** You can see in page four an example of cumaru with two years of natural aging without maintenance, due to a correct installation.*

5.1 GENERAL RECOMMENDATIONS

- Applying flexible points of adhesive for outdoor installations (Sikabond 52 or similar) between the batten and the flooring is recommended, in order to help the fastener in the fastening of the flooring and at the same time allow the natural movements of the wood.
- Glue end grains together applying lines of rigid adhesive for outdoor installations (Würth Multikraft or similar) on the base of the female.
- If desired, apply Sikkens Cetol WF 771 Saturator wood stain once a year, preferably in spring or when necessary according to the location's particular climatic conditions.
- Moisturise the wood frequently in periods of excessive heat, since this prevents deterioration caused by dehydration.
- Retighten the wood flooring after one year has passed since installation, and replace any boards with unrecoverable alterations such as breakages and splintering. Repeating this process is recommended every 3 years maximum.

5.2 MAINTENANCE PROTOCOL



After installation, following some basic maintenance procedures is recommended in order for the wood flooring to keep its initial natural beauty features.

You will find the protocols to carry out optimal maintenance of your wood flooring on our website.

Download them now at:

lopezpigueiras.com/maintenance



These installation instructions are the result of 50 years of combined experience: ours and that of dealers and installers who have purchased our products.

Furthermore, all our systems comply with Spanish UNE standards of installation of solid wood flooring.

Installation instructions endorsed by



WOOD INDUSTRIES TECHNICAL RESEARCH
ASSOCIATION OF SPAIN





QUALITY



COMMITMENT



ENVIRONMENT