



CUMARU

Botanical name:

Dipteryx odorata, Dipteryx alata, Dipteryx micrantha, Coumarouna odorata (synonymous), Dipteryx polyphylla, Dipteryx p.p.

Trade names:

Cumaru, Tonka, Cumaru ferro, Cumarurana, Kumaru, Tonka bean, Charapilla, Sarrapia

Location:

Cumaru wood originates from slow-growing hardwood trees of the *Dipteryx* species, native to the tropical rainforests of South America. In some regions, these trees are also referred to as tonka or Brazilian teak wood.

General description of wood:

The heartwood ranges from yellow-brown to red-brown, typically featuring yellow-red veins, while the sapwood is clearly demarcated and light in colour. Although patio tiles may come from the same source, they may show differences in grain and color, sometimes even within a single tile. The high density of the wood can cause tools to dull more quickly during processing. The high density of the wood can cause tools to dull more quickly during processing.

NATURAL DURABILITY INDEX						
1	2	3	4	5	6	7
1 = VERY HIGH LIFESPAN						7 = LOW LIFESPAN

Heartwood has a high resistance to wood decay fungi according to class 1.

Resistance to termites. Class D - durable

Wood properties:

Density (at W = 12 %)	1070 kg/m ³
heavy to very heavy wood	
Shrinkage in radial direction	5,5 %
Shrinkage in tangential direction	7,7 %
Total volume shrinkage	12,2 %
Medium shape changes, significant difference between tangential and radial drying	
JANKA hardness (at W 12%, radial direction)	14 800 N
Group	1N/mm ² =1MPa
Soft	<40
Medium hard	≥40
Hard	≥80
Bending strength (perpend.to the fibers tng. & rad.)	170 MPa
Compressive strength (in fibre direction)	103 MPa
Modulus of elasticity	26610 MPa

TECHNICAL INFORMATION

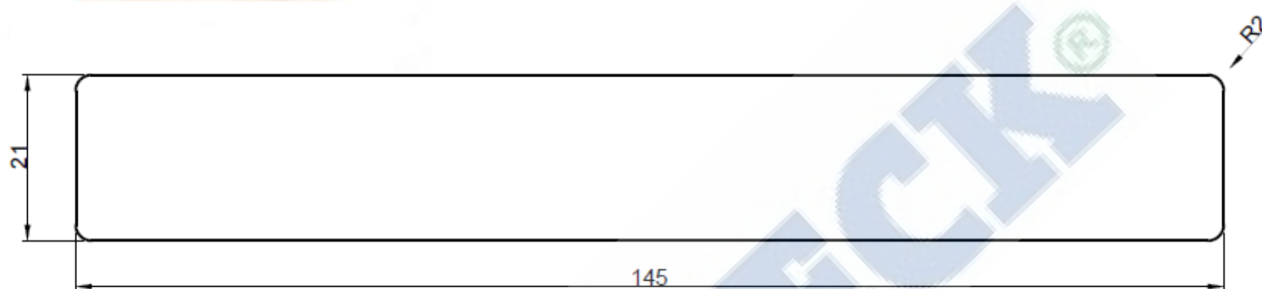
Cumaru Wood Terrace Boards

DIMENSIONS (mm)	LENGTH (m)	GRADE	DRYING	VIEW SIDE
21 x 145	1,8 - 5,7 *	A/B	16-18 %	smooth

*stock lengths are multiples of 30 cm = 1.8 m, 2.1 m, 2.4 m, 2.7 m, 3 m, 3.3 m, 3.6 m, 3.9 m, 4.2 m, 4.5 m, 4.8 m, 5.1 m, 5.4 m, 5.7 m



CUMARU 21 x 145 mm - profile detail



Sorting:

CUMARU wood decking boards are supplied in A/B grading in the ratio of 60:40. In practice, this means that sixty percent of the delivered material has no defects on the visible side of the decking boards at the time of delivery, and in general, the part can be divided into a maximum of two usable parts during assembly. The remaining forty percent of the boards may exhibit fine surface and end cracks. However, these cracks must not penetrate the entire thickness of the board and should extend at most to one-third of the board's length. An end crack is allowed in the maximum length of one deck board width. Healthy overgrown knots without restrictions, the possibility of local occurrence of insect holes (*only corridors of larvae* Ø 1-2 mm, *insects did not survive artificial drying and insecticidal treatment before transport*). Permitted occurrence of resin pockets.



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DRYING:

Wood is a moist hygroscopic material that changes its humidity according to its surroundings due to adsorption, in an attempt to achieve a state of moisture balance. Terrace boards made of Cumaru wood are artificially dried to a moisture content of 16-18%, which minimizes the risk of unwanted shape changes, significantly increases its mechanical properties with significantly improved resistance to bio attack. Shape changes due to drying and swelling cannot be completely prevented. As a result of the anisotropic character of drying and swelling with the simultaneous occurrence of internal tension in the wood, transverse and longitudinal buckling and the formation of drying cracks can occur.

VIEW SIDE:

Each decking board profile has a pre-defined view side to which the grading applies. The use of the opposite side as the visible face is not permitted. The visible side must be specified at the time of ordering.

21 x 145 mm view side - smooth

Board deflections and expansion joints:

As a result of the hygroscopicity and anisotropy of the wood, there can always be a slight deformation of the terrace boards in the longitudinal direction (curvature). These shape changes are not considered material defects and do not prevent the installation of the decking boards. In order to minimize the appearance of shape changes, it is necessary to store the material tightly spaced until the time of installation. For easier assembly of curved planks, it is possible to use the designed tightening clamps. Due to the swelling and drying of the wood due to the effects of the weather, it is necessary to leave a dilation of a minimum size of 8 mm between the individual terrace boards. The size of the expansion joint changes over the course of the year as the dimensions of the decking boards change due to weather changes. The main function of the expansion joint is the free movement of the terrace boards without the risk of damaging them.



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Spectrum of colours:

Decking boards made of Cumaru wood are not subject to color grading. The color spectrum is from yellow-brown to red-brown, usually with yellow-red veins. The sapwood is clearly defined, the sapwood is light. Although patio tiles may come from the same source, they may show differences in grain and color, sometimes even within a single tile. Over time, the wood gradually darkens. Due to the wood's natural variability, lighter and darker stripes may be visible in both radial and tangential directions under varying light conditions.

Ingredience:

Exotic Cumaru wood is very rich in tannins (*containing extractive substances*). These substances can be leached from the wood during exposure to the weather and cause colored stains on the surface of the wood and surrounding structures. During installation, care must be taken to ensure rainwater drainage and structural protection.

The greying of the wood:

From the moment the terrace boards are exposed to the weather, their degradation occurs due to the action of so-called non-living nature. Exposure to various environmental factors (water, radiation, temperature fluctuations, smog, emissions, etc.) causes lignin to break down initially through photochemical reactions. This decomposition does not cause visible darkening of the wood in outdoor conditions, because the disturbed lignin is subsequently washed away by rainwater and a lighter shade is created due to the light color of the non-degraded cellulose. In practice, however, the light shade is disturbed by the settling of dust particles and impurities from the air into the porous structure of the wood surface, or by the interaction of the growth of microscopic fungi, resulting in the well-known graying of the wood.

Reaction of wood with metal:

Metal particles or metal dust react with excessive exposure to moisture and create black spots on the surface of the wood in a very short period of time. It is essential to promptly clean any metal dust accumulated from cutting, grinding, or screw burrs off the wood surface, both during and after assembly (e.g. by thorough sweeping or vacuuming of the entire terrace area). At the same time, only use the connection materials recommended below for wood assembly. If black spots form on the surface of the wood during or immediately after assembly, the blackened parts of the wood can be removed using Osmo Wood Degreaser gel 6609 (use according to the product's technical sheet). However, if the stains are left on the surface for a long time, the reaction will continue to take place deeper into the structure of the wood and the subsequent removal of the blackening will be only partial.



TECHNICAL INFORMATION

Choice of connecting material:

Cumaru wood decking boards are moderately stable and can be installed with both a visible connection and an invisible anchoring system. Only materials that do not chemically react with the wood should be used to avoid any damage. This involves the use of steel class at least A4 for visible connection with screws, or composite materials meeting the strength requirements for invisible anchoring of the EURO Tec brand.

Recommended fasteners:

TERRACE BOARD	STEEL GRADE	DIMENSION OF THE ROLL	INVISIBLE ANCHORAGE
CUMARU 21 x 145 mm	A4	5 x 55 mm	NO
CUMARU 21 x 145 mm	A4	5,5 x 60 mm	NO

Substructure::

Installation of terrace boards can only be carried out on a base structure made of solid wood from one piece in available lengths of 2 - 5 m with the same or higher biological resistance of a minimum profile of 45 x 70 mm (exotic wood). The base structure made of layered and mutually glued lamellas of one type of wood with the same or higher biological resistance can be used exclusively for the construction of covered terraces, without constant exposure to weather influences. The underlying structure made of aluminum profiles is dimensionally stable, resistant to weather effects, UV exposure, insects and mold and is suitable for the construction of any terrace, regardless of the type of wood. The minimum axial spacing of the underlying structure for individual thicknesses of terrace boards is governed by the following table:

TERRACE BOARD	MAXIMUM AXIAL SPACING OF THE UNDERLYING PRISMS
CUMARU 21 x 145 mm	440 mm

Surface treatment

To enhance protection against biotic and abiotic degradation, it is advisable to treat Cumaru wood terraces with one of OSMO's pigmented terrace oils (*colourless paint is not recommended*). The application is carried out no earlier than three months after exposure to the weather, in order to wash out the contained substances and thereby enable the penetration of the paint into the pores of the wood. In order to maintain the best possible hydrophobic properties, it is advisable to carry out a renovation coating at an interval of about six months. To reduce the risk of frontal cracks, it is recommended to treat all cross cuts with OSMO 5735 cutting edge wax.



TECHNICAL INFORMATION

Remark:

The Technical Data Sheet serves as a supplement to the "Technical and Warranty Conditions of Real DECK"

Please note that our recommendations for the processing of boards for terraces are not binding installation guidelines, but recommendations. Each terrace is characterised by different parameters and the correct installation method and use of materials is always the responsibility of the installation company.

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