TECHNICAL INFORMATION

IPE

Botanical name:
Handroanthus spp. (formerly placed in the genus Tabebuia)

Trade names:
Lapacho, Guayacan, Ebéne verte, Paoďarco, Groenheart, Wehete, Wassiba, Ipê tabaco, Cogwood, Brazilian walnut, Paratodo, Puy, Lapacho negro, Ebano verde, Tahuari negro, Iron wood, Hakia, Tahuari, Tajibo, Polvillo, Araguaney Poi, Piúva, Ipê roxo, Ipê una, Ipê rojo, Red ipe (and many more)

Location of occurrence:
Described as ecologically diverse due to its growth in very different conditions. From grasslands to rainforests, it develops well in tropical dry forests with sandy and moist soil. Distribution in southern North America and northern South America (southern Mexico, Caribbean islands, Brazil, Guyana, Colombia, Venezuela, northern Argentina)

General description of the wood:
Grayish to reddish sapwood grades sharply to light olive green-brown heartwood darkening to zones of greenish brown to brown. Intermittently streaked to mottled in the radial section, the wood dull glossy. Significant dulling effect when processed with high cutting resistance. Fine grooves on longitudinal sections with light yellow filling (Lapachol).

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

Core wood has a very high resistance to biological agents.

Wood properties:

Density *(W = 12 %)*	**1000-1200 kg/m³**
very heavy wood	
Suction in the radial direction	**5,9 %**
Suction in the tangential direction	**7,2 %**
Total volume suction	**12,4 %**
Medium shape changes	
Hardness JANKA *(W = 12 %, radial dir.)*	**163,18 MPa**
Group	**MPa**
Soft	<40
Medium hard	≥40
Hard	≥80
Bending strength	194,56 MPa
Compressive strength	91,49 MPa

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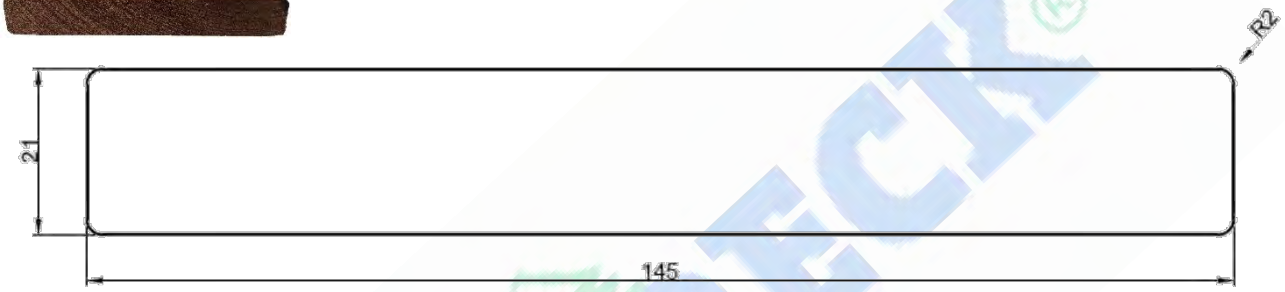
Decking planks made of IPÉ wood

Dimensions (mm)	Length (m)	grading	suction	faceside
21 x 145	2,1 – 5,7 *	A/B	16–18 %	smooth

**stock lengths are multiples of 30 cm = 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*

IPE 21 x 145 mm – profile



Grading:
Ipé wood deck boards are supplied in A/B grading in a 60:40 ratio. In practice, this means that sixty percent of the material delivered has no defects on the face of the patio boards at the time of delivery and, in general, the piece can be split into a maximum of two usable pieces during assembly. The remaining forty per cent of the delivery may show fine surface cracks and end cracks, but these shall not run through the entire thickness of the plank, but up to a maximum of 1/3 of the length of the patio panel. End cracks are permitted for a maximum length of one width of the patio plank. Healthy overgrown bitches without restrictions, possibility of localised insect holes (only larval passages Ø 1-2 mm, insects did not survive artificial drying and insecticidal treatment before transport). Allowed occurrence of pitcher plants.

Drying:
Wood is a hygroscopic material that changes its moisture content according to its surroundings through adsorption, in an attempt to reach a state of moisture equilibrium. Ipé terrace planks are artificially dried to a moisture content of 16-18%, minimising the risk of undesirable shape changes and significantly increasing its mechanical properties with greatly improved resistance to bio-attack. Shape changes caused by shrinkage and swelling can never be completely prevented. As a result of the anisotropic nature of shrinkage and swelling and the simultaneous development of internal stresses in the wood, transverse and longitudinal buckling and the formation of drying cracks can occur.

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Faceside (Viewside):
Each terrace board profile has a predefined face to which the grading applies. It is not allowed to use any other side as a view side. The view side must be specified when ordering.

21 x 145 mm faceside – smooth

Plank deflections and expansion joints:
Due to 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 a defect in the material and do not prevent the installation of the terrace planks. To minimize the occurrence of shape changes, the material must be stored firmly jointed until installation. To facilitate the installation of curved planks, it is possible to use clamps designed for this purpose. Due to swelling and shrinking of the timber due to weathering, it is necessary to leave a minimum 8 mm expansion joint between each patio plank. The size of the expansion joint will change throughout the year as the dimensions of the patio planks change due to weathering. The main function of the expansion joint is the free movement of the terrace planks without risk of damage.

Spectrum of colours:
Ipé wood decking boards are not subject to colour grading. The colour spectrum ranges from greyish yellow to reddish white wood to light olive green-brown heartwood darkening to zones of greenish brown to brown. The wood gradually darkens over time. Intermittently streaked to mottled radially. In longitudinal directions fine grooves with light yellow filling (Lapachol).

Substances contained:
Exotic Ipé wood is very rich in tannins (extractives). These substances can be leached from the wood during exposure to the weather and cause colour stains on the surface of the wood and surrounding structures. Care must be taken during installation to ensure rainwater drainage and structural protection.

The greying of the wood:
From the moment the terrace planks are exposed to the weather, they are degraded by the action of so-called inanimate nature. The interaction of several influences (water, radiation, currents, temperature changes, smog, emissions, etc.) leads to the first phase of lignin decomposition due to photochemical reactions. This decomposition does not cause any observable darkening of the wood in outdoor conditions, because the disturbed lignin is subsequently washed away by rainwater, giving a lighter shade due to the light colour of the undepleted cellulose. In practice, however, the lighter shade is disturbed by the deposition of dust particles and airborne impurities in the porous structure of the wood surface, or by the co-growth of microscopic fungi, resulting in the well-known greying of the wood.
Choice of fasteners:
Ipé timber decking boards are moderately stable, so they can be installed with either a visible screw connection or an invisible anchoring system. Only material that does not cause a chemical reaction with the wood must always be used to avoid deterioration. This means using stainless steel grade A4 as a minimum for visible screw connection, or composite materials meeting the strength requirements for EURO Tec invisible anchoring.

Recommended fasteners:

Decking board	Grade of steel	Screw dimension	invisible anchoring
IPÉ 21 x 145 mm	A4	5 x 55 mm	yes

Underconstruction:
The installation of the terrace boards can only be made on a substructure made of wood of the same or higher bio-resistance with a minimum profile of 45 x 70 mm (exotic wood Jarana, Bangkirai). The minimum axial spacing of the substructure for each thickness of the terrace boards follows the table below:

Decking board	Maximum axial spacing of joists
IPÉ 21 x 145 mm	420 mm

Note: It is also possible to mount the terrace boards on EURO Tec aluminium profiles, which are approved for Real DECK terrace boards.

Surface treatment

To increase protection against biotic and abiotic degradation, it is advisable to coat the Ipé wood terrace with one of OSMO's pigmented terrace oils (colourless coating is not recommended). The application should be carried out at the earliest six months after exposure to the weather to allow the leaching of the substances contained in the paint into the pores of the wood (due to the high density of Ipé wood and the extreme proportion of extractive substances contained, it is advisable to apply the coating only after approximately one year after installation). In order to maintain the best possible hydrophobic properties, it is advisable to carry out the renovation coating at an interval of approximately six months. To reduce the risk of frontal cracking, it is recommended that all transverse cuts are coated with OSMO 5735 cutting edge wax.

Remark:

The technical data sheet serves as a supplement to the "Real DECK Technical and Warranty Conditions".

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