



BANGKIRAI

Botanical name:

Shorea laevis

Trade names:

Balau, Pa-yom dong, Sen, Phchek, Selangan Batu, Aek, Yakal, Gisok, Malaykal, Sal, Thitya, Chan, Balau simantok, Damar laut, Pooti, Kedawang, Kumus, Brunas, Benuas, Aggelam, Ca-chac, Balau Kumus, Sengkawan darat

Location:

Hilly areas at elevations of 200 to 1000 m of primary and secondary tropical forests of all types in large areas of Southeast Asia, including islands (India, Burma, Thailand, Cambodia, Laos, Vietnam, Malaysia, Indonesia, Philippines).

General description of wood:

The yellow-brown colour of the heartwood gradually darkens, the white wood light, whitish to greyish sharply delineated. Fairly common colour variation from pale straw to darker brown. Fine to medium coarse texture, finely striped on the radial section due to the alternating twist of the fibres.

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

Heartwood has a very high resistance to biological agents.

Wood properties:

Density (at W = 12 %)	850-960 kg/m ³
very heavy board	
Shrinkage in radial direction	5,5 %
Shrinkage in tangential direction	10,1 %
Total volume shrinkage	15,7 %
Medium shape changes, greater difference between tangential and radial desiccation	
JANKA hardness (at W = 12%, radial direction)	100,61 MPa
Group	MPa
Soft	<40

Medium hard	≥40
Hard	≥80
Flexural strength (<i>perpendicular to the fibres of the tang. and rad.</i>)	144,45 MPa
Compressive strength (<i>in fibre direction</i>)	77,96 MPa

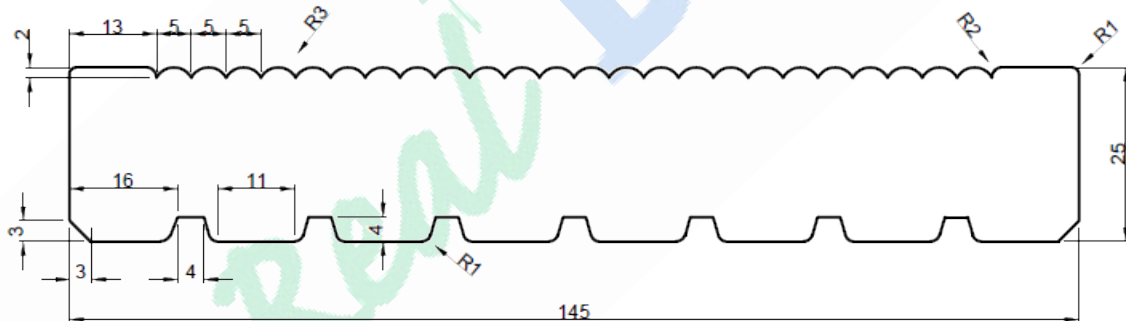
Terrace boards made of BANGKIRAI wood

DIMENSIONS (mm)	LENGTHS (m)	GRADE	DRYING	VIEW SIDE
25 x 145	2,1 – 5,7 *	A/B	16–18 %	fine groove

*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



BANGKIRAI 25 x 145 mm - profile detail



GRADE

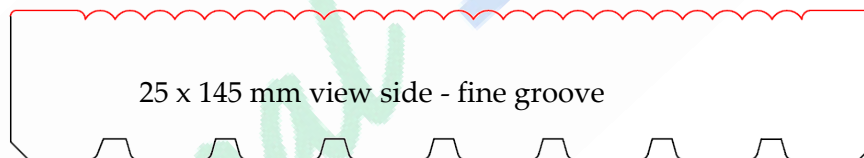
Terrace boards made of Bangkirai wood are supplied in A/B grading in a 60:40 ratio. In practice, this means that sixty percent of the material delivered has no defects on the face of the terrace boards at the time of delivery and, in general, the piece can be divided into a maximum of two usable parts during assembly. The remaining forty percent of the supply may show fine surface cracks and end cracks, but these must not run through the entire thickness of the board, but up to a maximum of 1/3 of the length of the board. An end crack is permitted for a maximum length of one terrace boardwidth. Healthy overgrown knots without restrictions, possibility of local insect holes (*only larval passages* Ø 1-2 mm, *insects did not survive artificial drying and insecticidal treatment before transport*). Permitted occurrence of pitcherworms

DRYING

Wood is a hygroscopic material that changes its moisture content according to its surroundings through absorption, in an attempt to reach a state of moisture equilibrium. Terrace boards made of Bangkirai wood are kiln dried to a moisture content of 16-18%, which minimizes the risk of undesirable shape changes, significantly increases its mechanical properties with greatly improved resistance to bio attack. Shape changes caused by slumping and swelling can never be completely prevented. As a result of the anisotropic nature of slumping and swelling with simultaneous internal stresses in the wood, transverse and longitudinal buckling and the formation of drying cracks can occur.

VIEW SIDE

Each terrace board profile has a predefined face to which the grading applies. Quality claims using any other side as a view side will not be taken to consideration.



Board 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 boards. To minimize the formation of shape changes, it is necessary to store the material tightly jointed until the time of installation. For easier assembly of curved boards, it is possible to use clamps designed for this purpose. Due to swelling and shrinking of wood due to weathering, it is necessary to leave a minimum of 8 mm of expansion between the individual terrace boards. The dimension of the expansion joint will change throughout the year as the dimensions of the terrace 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 damage.

Spectrum of colours:

Terrace boards made of Bangkirai wood are not subject to colour grading. The colour spectrum ranges from light, whitish to greyish in sapwood, through pale straw to brown in heartwood. Over time, the wood gradually darkens. Slightly striated due to spiral growth in radial direction.

Contains:

Exotic Bangkirai 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 (*despite the light colour of Bangkirai wood, the contained substances range in colour from greenish to black*). During installation, care must be taken to ensure rainwater drainage and structural protection.

The greying of the wood:

As soon as the terrace boards are exposed to the weather, they are degraded by the action of so-called inanimate nature. Several interacting influences (water, radiation, flow, temperature changes, smog, emissions, etc.) cause the lignin to decompose by photochemical reactions in the first phase. This decomposition does not cause any observable darkening of the wood under outdoor conditions, because the disturbed lignin is subsequently washed away by rainwater, producing a lighter shade due to the light colour of the unremoved cellulose. In practice, however, the light shade is disturbed by the deposition of dust particles and impurities from the air into 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:

Bangkirai wood terrace boards are moderately to less stable, so they can only be installed with visible screw connections. Only material that does not cause a chemical reaction with the wood must always be used to prevent deterioration. This involves the use of a minimum A4 grade stainless steel for visible screw connections.

Recommended fasteners:

TERRACE BOARD	STEEL GRADE	DIMENSION OF THE ROLL	INVISIBLE ANCHORING
BANGKIRAI 25 x 145 mm	A4	5 x 60 mm	NO

Substructure:

Installation of terrace boards can only be done on a solid wood substructure in one piece in available lengths of 2 - 5 m of the same or higher bio-resistance with a minimum profile of 45 x 70 mm (*exotic wood Jarana, Bangkirai*). Substructures made of laminated and glued together slats of the same or higher bio-resistance wood species can be used exclusively for the construction of covered terraces without permanent weathering. The aluminium profile substructure is dimensionally stable, weatherproof, UV-resistant, insect and mould resistant and suitable for the construction of any terrace, regardless of the type of wood. The minimum axial spacing of the substructure for individual thicknesses of terrace boards is given in the following table:

TERRACE BOARD	MAXIMUM AXIAL SPACING OF THE UNDERLYING PRISMS
BANGKIRAI 25 x 145 mm	500 mm

Surface treatment

To increase protection against biotic and abiotic degradation, a terrace made of Bangkirai wood should be coated with one of OSMO's pigmented terrace oils (*colourless coating is not recommended*). The application is carried out at the earliest three months after exposure to the weather in order to allow the leaching of the contained substances and 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 end cracks, 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 "Technical and Warranty Conditions of Real DECK"

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

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