

Technical and warranty conditions for:

- 1) outdoor wooden terraces REAL DECK made of exotic woods bangkirai, Bukit, Merbau, massaranduba, garapa, teak and ipe
- 2) REAL DECK outdoor wooden terraces made of coniferous pine, pressure-impregnated pine, thermowood pine and thermowood ash, Siberian larch, Silesian larch and western red cedar

SPECTRUM OF COLOURS

Massaranduba, Garapa and Ipe are deciduous exotic tree species with a natural range in northern South America and southern North America. Bangkirai, Bukit, Merbau and Teak are native to the Indo-Malayan region of Southeast Asia. A natural characteristic of exotic woods is the variety of colours within a single wood species or a single piece of decking. Starting with light brownish-yellow shades to dark reddish-brown colours. This play of colours makes outdoor wooden terraces made of exotic wood look very lively. The sapwood is light in colour and gradually sharply distinguishable from the heartwood, which is yellow, grey or brown and gradually darkens to a deep brown shade. The texture is, in some cases, slightly streaked with a slight sheen due to the twistiness of the grain. Exotic wood patio planks are supplied unfinished, so you should expect the patio to look lively once installed. The natural variety of colouring unification is achieved by subsequent surface treatment of the terrace with OSMO Terrace Wood Oil / see terrace maintenance /. Insect holes may occur in the wood (mainly in Bangkirai). In this case, these are the trip holes of a pest in fresh wood that attacks the living tree. After felling, the pest dies. Therefore, there is no danger of further infestation or jumping to other wood. These small insect pathways do not affect the durability or static properties. The occurrence of pinholes must be accepted. In connection with transport, light mould may also form on the surface due to transporting goods in closed containers through several climate zones. This surface mould does not affect the mechanical properties of the wood or otherwise degrade it. It can be easily removed by brushing.



VIEW SIDE - grooving

/IEW SIDE - grooving		
View side	Species	Dimension
	Scots pine	26 x 146 mm
	Scots pine, pressure- impregnated Bochemit	26 x 146 mm
~~~~~~~	Silesian larch	24 x 136 mm
	Silesian larch	28 x 140 mm
	Silesian larch	28 x 145 mm
View side	Species	Dimension
	Massaranduba	21 x 140/145 mm
	Bukit	19 x 90 mm
	Scots pine, pressure- impregnated brown	27 x 143 mm
	Thermowood pine	26 x 140 mm
View side	Species	Dimension
	Massaranduba	25 x 145 mm
	Bangkirai	25 x 145 mm
	Merbau	25 x 145 mm
View side	Species	Dimension
	Bukit with tongue and groove on the transverse side	28 x 145 mm
View side	Species	Dimension
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Garapa	25 x 145 mm
لممممما	Siberian Larch	27 x 145/142/140 mm
View side	Species	Dimension
	Thermowood pine - clip	26 x 115 mm

• View side = green marked.



VIEW SIDE - smooth

View side	Species	Dimension
	Thermowood ash	20 x 115 mm
	Thermowood ash	20 x 140 mm
	Thermowood pine	26 x 140 mm
	Silesian larch	28 x 140 mm
	Siberian Larch	27 x 140 mm
	Siberian Larch	28 x 140/142/145 mm
	Siberian Larch	28 x 120 mm
	Western Red Cedar	40 x 140 mm
	Bukit	18 x 140 mm
	Merbau - clip	22 x 140 mm
	Garapa	22 x 140 mm
	Ipe	21 x 145 mm
	Teak with tongue and groove. Groove on the transverse side	20 x 120 mm
		20 x 90 mm

• View side = green marked.

In the case of double-sided marked sight grooving, you will be supplied with the material with the sight grooving, which you will tell us when ordering the material.

Always ensure that you select the correct installation of the patio panels with the facing side as the sloping side, or facing side, before purchasing the material.

Differences/ swelling and shrinking of timber

Wood is a natural material that "works". Therefore, changes in the dimensions of the timber sections in thickness and especially width (up to 10%) can occur due to climatic changes in the seasons. This swelling and shrinkage of the timber should be considered in your design, particularly in the terrace boards' design. The specified total radial and tangential shrinkage and swelling of exotic woods must be considered (please ask our dealers for details or consult the literature (Rudi Wagenführ's Wood Lexicon). Of the wood species used extensively for outdoor wooden terraces, "Massaranduba" works the most (tangential slumping and swelling up to 10%), for which it is particularly important to choose the correct expansion joints between the individual terrace planks. In the case of Massaranduba, wood supplied in an air-dry state with a moisture content of between 20-25% and wood in an artificially dried state with a moisture content of between 16-18% should be treated differently.



In terms of material, moisture is a decisive characteristic. The water content of a patio panel determines whether the dimensions and shape of the product remain unchanged or whether the panel is enlarged or reduced. In the wood, there is free water and bound water. Free water is in the cell cavities, and bound water is contained in the cell walls. First, the free water evaporates from the material, and no significant dimensional changes in the material occur during this process. Therefore, choosing the correct time for laying terraces when using this material is advisable, as higher temperatures and prolonged dryness are not desirable for laying. However, wood still contains water bound, which evaporates until a so-called moisture equilibrium is reached. The rate of evaporation of bound water depends on several factors:

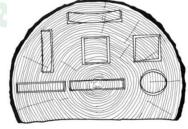
- the type of wood

right (Kollmann 1968).

- the higher the ambient temperature, the faster the water evaporates, and the more the material is at risk of shrinking and cracking due to internal stresses in the wood
- the lower the moisture content of the wood, the slower the wood dries out
- other influences, which, however, do not have such a great impact on the shape changes of the terrace elements

Wood is a hygroscopic material that changes its shape depending on the humidity. This process of change in humidity, depending on the ambient humidity and temperature, is reversible but does not follow the same plane.

For the same relative humidity and air temperature, the moisture content of wood is higher in desorption than in adsorption, with a relative humidity range of RH 30% - 90% of 2.5% to 3.5%. This means that the wood shrinks in volume as it dries and does not return to its original size when moisture is removed. These phenomena, called adsorption or desorption, mean that the wood tries to reach a state of moisture equilibrium depending on its exposed environment. Along with adsorption or desorption, there are always shape changes below the hygroscopic limit, directly proportional to the direction of the wood grain and the percentage change in moisture content. These factors, therefore, have a major influence on the behaviour of the terrace floor. During the year, changes in humidity also occur due to prolonged rain, snowfall and snow melt, whereby the boards will swell and increase in volume during this period, but by approx. 2.5 - 3.5% of their current width. It is also important to note that the terraces are cut in different orientations to the axis of the trunk, tangentially, radially and semi-radially, which affects the slump in the dimensional percentages. Therefore there are always different dimensions in the joints between the individual planks, even though they have been laid with the same expansion. For these reasons, the individual terrace planks must not be left loose until installation but instead be stored firmly jointed, as changes in shape are very likely for the above reasons. The intensity of the shape changes on the individual terrace planks is variable due to the position of the plank in the trunk and the known heterogeneity of the timber; the various deformations can be explained very clearly in the figure on the



Longitudinal flat simple

Longitudinal flat composite

Longitudinal flat side

Transverse

Helical



Conclusion:

Any solid wood material installed outdoors will not stay still and will constantly work according to the environment to achieve moisture balance. It is not recommended to install timber terraces when the temperature is below 5°C. Always follow the REAL DECK recommended installation instructions for outdoor wooden terraces.

Deformation & cracking & quality Exotic woods:

Bangkirai with a density of 850-1155 kg/m3. Massaranduba with a density of 1100-1200 kg/m3. Bukit with a density of 505-870 kg/m3. Merbau with a density of 850-1000 kg/m3. Garapa with a density of ca. 900 kg/m3.

Ipe with a density of approx. 1200 kg/m3. - belongs to the hard, very heavy woods (Hardwood), where the individual pieces of wood can have different densities and, therefore, different weights. The reason for this is the natural variability of the properties of the growing material resulting from the conditions it is exposed to during growth (the so-called heterogeneity of the wood). The density of the wood of specific species is often average, but some terrace planks may have a bulk density outside this range. Wood will remain wood. Do not expect any stone or plastic - Bangkirai, Bukit, Merbau, Massaranduba, Garapa and Ipe are all naturally grown materials. Randomly, there is an alternating spiral growth. This must be accepted as it is part of the natural characteristics of wood. The timber must be immediately mounted on a pre-prepared grid after being released from the transport straps. If the straps are released arbitrarily without immediate assembly, and the parts are deformed by twisting, the timber will not be replaced! In the same way, the parts must be stored before assembly, i.e. always tightly taped. All hardwoods are prone to cracking at the ends of the faces and cannot be claimed. Due to the different behaviour of the faces and ends of the faces during drying, this is quite normal. To prevent cracks as much as possible, it is advisable to treat the decking with oil 1-2 times a year - see maintenance instructions and to surface treat the decking faces with OSMO Cutting Edge Wax No. 5735.

Coniferous trees:

Siberian larch and Siberian larch terrace timber Supplied in quality: A/B

- 1. We supply larch terrace parts according to EN 14519.
- 2. Siberian larch is one of the most valuable and durable species among coniferous wood species. The resin contains repels water as a natural impregnation and protects the wood from fungal attacks. Due to its slow growth in cold regions, Siberian larch is harder than European larch.
- 3. Silesian larch is only harvested in the Jesenice foothills and parts of Silesia in the Bruntál, Krnov and Opava regions. Healthy wood is used, basically with shrunken edges and with a low sapwood content. Variations in colour & moulding are natural characteristics of the wood, which must be tolerated.



- 4. Typical characteristics of Siberian and Silesian larch include the tendency to form longitudinal cracks and resin delamination, which can occur during installation and use. However, with OSMO's "Resin Removal Kit", you can easily eliminate this small problem yourself. Larch is particularly sensitive to iron, and to avoid rust spots, we recommend only stainless steel fasteners. Because larch is prone to splitting, all attachment points should be pre-drilled (especially at the edges and ends of the boards see the exact procedure REAL DECK's instructions for laying wooden decking). OSMO Cutting Edge Wax No. 5735.
- 5. Use sound wood, basically with bevelled edges and no sapwood. Differences in colour & staining is a natural characteristic of the wood and should be tolerated.
- 6. The wood is dried to a final moisture content of approx. 18% +/- 2%.
- 7. Wood is planned dimensionally and consistently, and imperfections may be individually contained in the planning. Isolated edge knots and cracks in the knot area are permitted, provided the laying is guaranteed.
- 8. Cracks on the face side (not running through the thickness of the board) up to a maximum of 1/3 of the length of the board may be included. End cracks up to the width of the board are permissible. Typical characteristics include a tendency to longitudinal cracking, twisting and resin sintering, which may also occur during laying. To prevent rust streaks, only stainless steel fasteners are recommended. Because larch is prone to splitting, all attachment points should be pre-drilled (especially at the edges and ends of the boards).
- 9. Spruces and core beams are acceptable in reasonable proportion.
- 10. Twisted growth is permissible if laying is possible.
- 11. Patio planks are graded according to aspect.
- 12. A typical characteristic of larch is its high resin content. However, due to the content of this substance, larch does not need to be impregnated. The above points describe the characteristics of the timber according to the standard the manufacturer grades and supplies the terrace timber. These conditions are given at the time of delivery so that boards are not installed in apparent contradiction to the technical standard. The drying cracks that form during use, which are natural to wood outdoors and whose intensity varies only according to the specific conditions, the type of wood, etc., can never be ruled out based on the fundamental properties of wood, which are anisotropy, heterogeneity and hygroscopicity. In combination with these properties, it is impossible to define how large a drying crack will form after exposure to the weather; therefore, the complaint conditions cannot be defined in this way either since these are dates at the time of delivery under controlled conditions.



Terrace made of pine and impregnated pine. Supplied in quality: A/B

- 1. We supply pine terrace panels according to EN 14519
- 2. For terrace timber made of pressure-impregnated pine with Wolmanite and Bochemite, greenish efflorescence (Wolmanite) and whitish efflorescence (Bochemite) occur on the surface, especially in the area of the knots. This resin is produced during the pressure impregnation process and mixed with the impregnating agent.

This light green or whitish salt blooms weather over time.

Provisions for grading:

To catch grading errors which cannot be avoided, these grading provisions apply only to 95% of the batches (goods) at any time; i.e. a maximum of 5% of the number of pieces may show slight quality variations.

Thermo pine terrace Supplied in quality: A/B

Cracks split

- 1. Through the entire thickness of the board not allowed.
- 2. End cracks allowed along the width of the plank up to a maximum of 20% of the total supplied volume per 1 order.
- 3. Circular cracks not allowed.
- 4. Overlapping cracks not allowed.
- 5. Narrow cracks max. 0.5 mm wide on the visible side up to 10% of the length. Rear side max. 2 mm wide up to 20% of length. Max. up to 20% of the total volume delivered on 1 job.

Knots

- 1. Small knots under 10 mm allowed. Over 10 mm, only healthy bitches are allowed.
- 2. Solid sound knots in the area allowed up to a maximum of $\frac{1}{2}$ the width of the board, and edge knots allowed up to 100% of the thickness of the board.
- 3. Dead knots in the area up to 25% of the board width and edge knots allowed up to 75% of the board thickness.
- 4. Bark-bounded knots in an area up to 20% of the board width and edge knots allowed up to 70% of the board thickness.
- 5. Cracked knots small cracks and chipped pieces are allowed.
- 6. Side and corner bunches allowed in all sizes as long as they are overgrown and tight.
- 7. Clump and tangle of bunches allowed as long as they are sound bitches.
- 8. Dropped bitches and bitch holes up to 5mm deep, 2 per board are allowed.
- 9. Dropped bitches and holes through the thickness of the board not allowed.



10. The number of healthy and dead boughs / worst variant per 1/bm on the view side is 5 (3 of which are bark bordered), 3 edge boughs (2 of which are bark bordered).

Grading provisions:

To cover grading errors which cannot be avoided, these grading rules apply only to 95% of the batch (goods) at any one time; i.e. a maximum of 5% of the number of pieces may show slight quality variations.

Contained substances - seepage on the surface

Bangkirai and other hardwoods retain their durability due to a large amount of stored oily contained substances. These constituents partially seep to the surface during the first phase of exposure to weather conditions and may be washed away by rain. The leached tannin and other substances contained in the wood can cause colour stains on building materials - plaster, brick, and stone. In this connection, other construction parts /plaster, tiles, etc./ must be protected accordingly, as any substance contained can only be removed with great difficulty or not at all. Timber placed on terraces or balconies where this contact may occur must be used so that the water running off the timber is drained off through gutters and rain gutters. We recommend that hardwood terraces are treated with wax - Osmo Cutting Edge Wax No. 5735 - on all cutting edges before installation and then fixed firmly to the prepared grid immediately afterwards.

In case of contamination of the surrounding parts due to substances contained in the wood Bangkirai, Merbau, Massaranduba and other woods that are spontaneously leached from the wood due to exposure to the weather use oxalic acid (in a ratio of 1: 25) or dilute sodium dithionate (in a ratio of 5 -10%) to clean. It is recommended to test cleaning first on a low visibility area and then clean visible contamination if the result is satisfactory.

Surface treatment

Below we describe and illuminate the options for painting with Osmo wood coatings.

Thermo Pine and Thermo Ash

Thermally treated wood is susceptible to very early greying after exposure to weather conditions. For this reason, we recommend treating this wood within the first two weeks after processing. The use of impregnation is not strictly necessary. This wood can be treated with any Osmo coating for exterior use. Due to the good oil absorption, more paint may be used than is stated on the product label.

PRESSURE-IMPREGNATED PINE (BROWN)

Due to impregnating salts, the adhesion of the coating is limited immediately after processing. Only after approximately 6 months of weathering in normal outdoor conditions are the excess salts in the wood naturally washed away. Only then will the wood be ready to receive the protective coating. Additional impregnation is no longer necessary. After the wood has weathered, it is recommended to de-grey the wood with OSMO Wood Degreaser-Gel and then apply the treatment coat.



Pressure-impregnated pine can be coated with any Osmo exterior coating.

SIBERIAN/SILESIAN LARCH

Larch is a resin-rich wood, so exposure to weather conditions before the actual coating is advisable. For this reason, we recommend treating this wood approx. 3-4 weeks after processing or after laying. The use of impregnation is not strictly necessary. This wood can be treated with any Osmo Terrace Oil containing pigments. For exterior use, the colourless type of OSMO Terrace Oil is not recommended for larch wood. Due to the different types of grooves in the patio boards, more paint may be used than is stated on the product label.

WOOD SPECIES RICH IN SUBSTANCES - EXOTIC WOODS

Remember that the surface's first weathering noticeably increases the wood's absorption. For this reason, it is recommended to wait a sufficient time before applying the first treatment coat, especially for substance-rich woods. The terrace surface should be treated with oil only approx. 2-3 months after laying, when the natural loss of oily substances from the wood has occurred. However, even after this time, leaching of the pigments contained in the wood and the formation of stains (most often in the case of exotic woods such as garapa, Merbau, massaranduba and ipe) cannot be completely ruled out. In some cases, leaching may occur even several weeks after the application of the oil coating due to the gradual penetration of moisture into the wood with the subsequent leaching of tannins, the content of which is very high in exotic wood and is a key parameter for the longevity of the wood in the exterior. Due to its hydrophobic properties, the surface treatment may subsequently cause impaired water drainage from the wood containing natural pigments and thus intensify the formation of colour stains which may form visually 'under the paint.

For more details, please refer to the current REAL DECK terrace catalogue and preferably to the respective REAL DECK information sheets on the individual wood species.

Resin

Bangkirai and other hardwoods contain almost no free resin. You will rarely find a single pitch (it looks like it has been cemented), so no one will carry resin under their feet with them into the living room. Quite an important difference from many other kinds of wood!

On the other hand, Siberian larch and Silesian larch contain a greater amount of resin than pine wood.

Stain formation

Bangkirai and other hardwoods occasionally produce various visible stains (stains from water, rust, dirt, and dust...). This can only partially be prevented when transporting through 3 climate zones, and mechanical damage is prevented as much as possible by heavy export packaging. Occasional rusting of the steel strips occurs due to high humidity and condensation water, leading to the black colouration of Bangkirai. As a rule, this discolouration occurs on the longitudinal edges of the boards, and to a lesser extent on the surface of the parts. Please read below: Removing rust stains is what you can do against it.



Greying / maintenance

Bangkirai and the other named woods also turn grey like any other wood. With OSMO Terrace Oils, such as Bangkirai Terrace Oil, Massaranduba Terrace Oil or Garapa Terrace Oil, you can visually enhance these woods for a long time. OSMO Terrace Oils are specially formulated for each type of wood so that the pigments contained in the coating do not suppress the natural colour shade of the wood. Still, the colour pigments accentuate the natural colour shade of the wood and unify any natural colour variations. In addition, the pigments can provide UV protection to the wood. We do not recommend using colourless oil paints to protect wooden terraces outdoors, as their durability is only short-lived. And if you forget to do the annual renovation coating and the wood turns slightly grey, you can solve this shortcoming again with OSMO. Remove the greying of your patio from exotic hardwoods with OSMO Wood Degreaser - Effective Gel No. 6609. You can only partially de-grey a larch or pine patio with this OSMO product, as these woods have a lower density and larger wood pores, and the patina can no longer be brushed out of these pores to its original light shade. Yet, de-greying these woods with OSMO Effective Gel is very effective.

Removing rust stains

As previously stated, black discolouration caused by a metal reaction cannot be prevented entirely. However, many of these discolourations only occur in the built-up state in the garden. A classic example is the blackening caused by working with metal in the vicinity, e.g. from metal railings or galvanised roof gutters. Often, this iron dust causes enormous damage, turning complete terraces black (this can, of course, no longer happen with rusted wood, and a good oily finish will also prevent this from happening). But even such cases can be solved: with oxalic acid. You can remove such discolouration without any residue. It is best to rub it in with a brush. Then rinse off the oxalic acid with plenty of water - DONE. You can get oxalic acid at the dry goods store. Please note that with weak acids, all necessary safety provisions must be observed without fail (find out when buying). For example, you should wear rubber gloves and a painting mask (to avoid respiratory irritation). Also, ask about the effect on nearby plants or ponds (change in pH value) away from children and pets.



Maintenance instructions for outdoor terraces with oil surface treatment: General instructions:

Due to weathering and stress on the floor, the oil will be removed from the surface during the season. This can cause the wood to turn grey and need appropriate maintenance and additional oil treatment.

Regular maintenance:

Since the surface in an unprotected outdoor area is highly stressed, , you should take care o care of it regularly. Water and Osmo Wooden Patio Cleaner can remove dirt and stubborn stains. Damage to the oiled surface (e.g. small stones) should be thoroughly cleaned and reoiled. This can easily be done even on localised parts of the surface. Sanding the surface is not recommended. A full-scale recovery of the wood surface should only be carried out after a few months. Osmo Wood Patio Cleaner is a concentrate and can be diluted in a ratio of 1:1 to 1:25, depending on the soiling. Always clean the patio in the direction of the wood grain with a mixture of water and concentrate in the specified ratio using the Patio Cleaning Brush with a holder for connection to the Osmo System Telescopic Pole. Afterwards, rinse with clean water. We recommend using the Osmo FloorXcenter with a brush disc for larger areas.

Spring cleaning:

Your wooden patio needs a refresh from time to time as the Terrace Oils are subject to natural weathering and are mechanically "ochozed". This "spring cleaning" is very easy with Osmo Terrace Oils. The wooden terrace can be easily cleaned and oiled before it becomes grey. To do this, the entire patio area must be thoroughly cleaned in the spring with the Patio Cleaning Brush with a holder for connection to the Osmo System Telescopic Pole and a mixture of water and Osmo Wooden Patio Cleaner. Any green coating on the patio can be removed with Osmo Gard Clean. Once thoroughly dry, the last applied coating should be reapplied once, while unweathered areas with low mechanical load can be recoated infrequently. If you find the surface of your patio too smooth, apply a thin coat of Osmo Anti-Slip Patio Oil after the pigmented Patio Oil has dried.

- > Osmo Terrace Oils new protection without abrasion
- > Osmo Anti-Slip Patio Oil for additional safety

Intensive cleaning and revitalisation

Your wooden terrace is already several years old, still untreated, and exposed to natural weathering such as rain and UV rays. Has it acquired a grey patina? Then your wooden terrace can easily regain its natural colour shade. Cleaning and revitalisation are very simple with Osmo Wood Degreaser Gel No. 6609. For this purpose, the entire terrace is moistened with clean water. The Osmo Wood Stain Remover Gel is then saturated with the Osmo Patio Brush in the direction of the wood grain. After approx. 20 minutes, clean with a hard Osmo Patio Cleaning Brush and rinse with plenty of water. It's even easier with the Osmo Patio and Floor Cleaner. The counter-rotating brushes clean even more intensively while absorbing loose dirt. After about 48 hours of drying, one coat (Osmo Terrace Oil) should be applied to the fresh-looking wood again to protect it and keep it in good condition.



Total Restoration

In the case of reconstruction, total renewal of the terrace coating, and removal of localised wear or weathering, the old coating must first be removed entirely. Only then can the terrace area be re-treated. The alkaline Paint Remover-Gel No. 6611, specially developed for removing old oiled paint from patio boards, can be done quickly and efficiently. Treating this way is advantageous as it eliminates the need to sand the wooden surfaces before re-treating. The first step is to apply the gel with the Osmo Terrace Brush to the entire surface of the patio. After approx. 30 minutes of application, the area should be scrubbed with the Osmo Patio Brush and sprayed with clean water to remove loose paint and gel residues. If you want to get the original shade of the wood after spraying the terrace, use the Osmo Wood Stain Remover Gel, the use of which is described in the previous paragraph. After this step, allow the terrace to dry perfectly, so the wood is ready to receive the new oil coating.

Warranties

The warranty does not cover mechanical damage, violent or unprofessional handling, drying cracks and other defects caused by the unprofessional intervention. The warranty does not cover minor deformations due to the spiral growth of the wood, which is easily flattened when the terrace parts are mounted on the pre-prepared grid and do not impair the functionality of the terrace in any way. Similarly, the supplier is not liable for defects resulting from improper installation (contrary to the REAL DECK outdoor wooden patio installation instructions), maintenance, cleaning and chemical damage or damage caused by excessive drought or fire.

Claims

Complaints are governed by Au-Mex's Complaints Policy, which can be obtained directly at the time of purchase or requested electronically at info@au-mex.cz.

Direct importer of REAL DECK patio panels:

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