

MOSO[®] Bamboo N-durance[®]

Beautiful, elegant
and sustainable
outdoor products

Alvaro Jose Pereira



Bamboo locks enormous
amounts of CO₂!

5240 kg CO₂
Gianluca Ricci



m_oso[®]

MOSO®

Bamboo N-durance®

With Bamboo N-durance®, MOSO® transforms the rapidly **renewable resource** bamboo into **beautiful** natural outdoor products with a warm caramel colour. The **technical** and **ecological** benefits make Bamboo N-durance® the real outdoor **'building material of the future'**. MOSO® uses a unique **Outdoor-Density®** process that combines special crushing, steam-pressure treatment and compression with a special finish to enhance the **durability, hardness, dimensional stability, fire resistance** and **look**.



Bamboo: the fastest
growing plant
in the world

“With

MOSO® Bamboo

N-durance®

*we use the latest technologies
to produce a product that
doesn't only perform in terms of
stability and durability, but also
has a warm, natural appearance
which is appreciated by so
many people”*

Arjan van der Vegte, R&D Manager Moso International BV

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Villa Pacheco

(70 m²) Paços de Ferreira, Portugal

From bamboo to Bamboo N-durance®

Thermally modified and engineered bamboo products are becoming more and more popular throughout the outdoor building industry. Kilometers of decking, numerous façades and various outdoor furniture projects have utilised 'the building material of the future'. Bamboo is a rapidly renewable resource and the perfect material for MOSO®'s innovative outdoor product: MOSO® Bamboo N-durance®. Allow us to explain exactly how it is made.

Stem to strands

After harvesting, the mature bamboo stems are split into strips in a longitudinal direction and the outer and inner skins are removed. The strips are then crushed using a number of incision rollers which create cross linked strands. The strands are light yellow in colour and change to a rich caramel colour after a steam-heat process at a temperature of between 130°C and 140°C (carbonisation). By doing this, the material becomes more stable.

From strands to product

To create outdoor products, the treated bamboo material is converted into panels as follows: Bamboo strands are dipped into phenolic glue and, after drying, the strands are put into a mould and compressed under high pressure and at high temperature. The output of the compression process is a large panel, which is cut into smaller sections (boards and beams). These are then further processed and profiled into the required shape (for example, for decking: a grooved surface and edge grooves to allow for installation with fasteners). As a last step, the outdoor products are prefinished with a special treatment and coating that prevents fast weathering and limits surface fungi development.

Outdoor-Density®

We call the combination of crushing, steam-pressure treatment and compression an Outdoor-Density® process. It increases the density from 650-700 kg/m³ to approx. 1200 kg/m³ and improves the hardness and stability of this product significantly. After pressing, the material is stronger and harder than almost any other hardwood in the world. At the same time, the dimensional stability of bamboo is improved substantially. In addition, the Outdoor-Density® production process gives the material its beautiful natural appearance with a rich caramel colour.

Besides stability and hardness improvements, the durability is improved to the best durability class possible, from Class 5 to Class 1 according to EN 350 / CEN/TS 15083-2, simulated graveyard test / Class 1 according to EN 350 / EN 113-2 (CEN/TS 15083-1). Bamboo N-durance® achieves the use/risk Class 4 according to EN 335.

Test results are available at the end of the document.

Made from bamboo -
the fastest growing
plant on earth.
Ready to harvest after
only 4-5 years.



Split the bamboo stems,
removing the outer and
inner skins and crushing
the strips into strands.



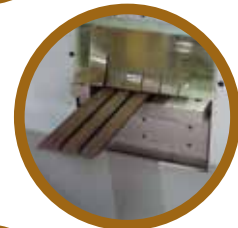
Special crushing
and carbonisation
at ca. 140°C.



Compressing under
very high pressure
into Outdoor-Density®
material.



Profiling and
sanding.



Applying a
special finish.



MOSO® Bamboo N-durance® benefits



Beautiful & elegant

- A warm caramel colour.
- Natural, high quality look.
- Choice between flat / grooved reversible board or the curved surface board.
- Use of hidden fasteners avoids face screwing and plugging.
- For decking periodic maintenance is recommended to retain the caramel colour and ensure a luxurious appearance.
- Cladding does not require periodic maintenance.



Hard & durable

- Exceptionally hard: Brinell $\pm 9.5 \text{ kg/mm}^2$ (harder than any tropical hardwood available).
- Very high density: $\pm 1200 \text{ kg/m}^3$.
- Bamboo N-durance® with Durability Class 1 according to EN 350 / CEN/TS 15083-2, simulated graveyard test / Class 1 according to EN 350 / EN 113-2 (CEN/TS 15083-1).
- Use Class 4 in accordance with EN 335.
- Strong fungi resistance according to EN ISO 846, after superficial treatment (tested on new material).
- MOSO® gives Bamboo N-durance® Decking 25 years warranty.



High stability

- Very stable as a result of a unique Outdoor-Density® process: crushing, carbonisation under high pressure and compression.
- Far more stable than tropical hardwoods - enabling an end-match system (tongue & groove on ends).
- Limited tendency to warp.
- No gap between the ends of the boards necessary.
- Only 5-6 mm space between the boards when MOSO® Fasteners are used.
- Closed cladding profile allows for an installation without a gap between the boards.



Fire resistant

- Achieves fire resistance Class Bfl-s1 (decking) and B-s1-d0 (cladding, beams) following EN 13501-1 without the use of fire retardants.
- As a result, MOSO® Bamboo N-durance® can be easily applied in public projects without additional protective measures.



Easy to install

- Can be installed using hidden fasteners (edge grooved) or face screwed.
- Both sides of the board - grooved or flat - can be used.
- Fixed board length 1850 mm, easy for 1 person to install, no complicated installation plans necessary.
- MOSO® Fasteners make it easy to install and uninstall.
- End-match system simplifies the installation by allowing the joint to float between the joists.
- MOSO® Sub frame joists available.



Endless resource

- Made from bamboo; with a growing speed of up to 1 meter per day it is the fastest growing plant on earth.
- Ready to harvest after 4-5 years (compared to up to 100 years for hardwood species).
- Engineered product consisting of 83% natural bamboo strands.



Economical

- Simple and fast installation; up to 30% savings in installation costs!
- Reduced waste because of the end-match system.
- Cost effective transportation because of the fixed 1850 mm length.
- Cost effective and space reducing stocking because of unique multi usable board.



Stored Carbon

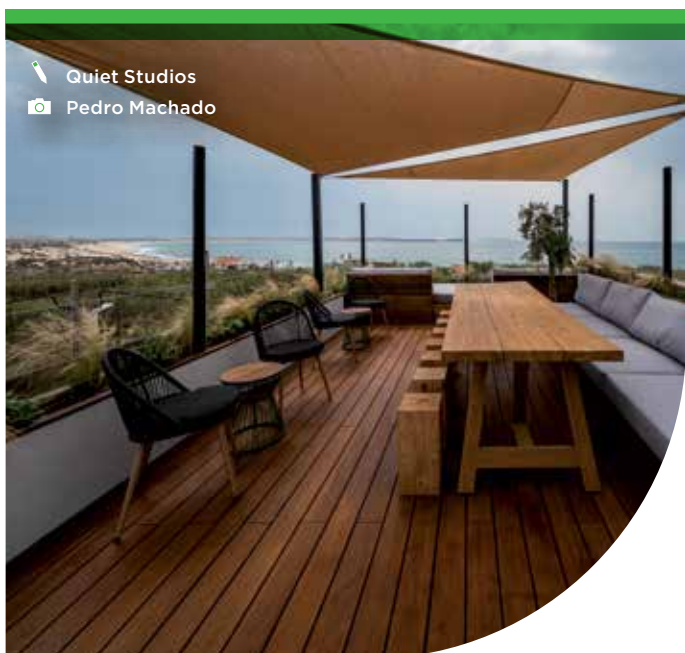
- Due to the fast growth - and related high yields - Moso bamboo locks far more CO₂ in durable products compared to wood species.
- It is possible to measure (or calculate) the amount of carbon stored in your project, so feel free to contact our bamboo experts to get more information.



WARRANTY
25
YEARS

130995 kg CO₂
 Brenac & Gonzalez et Associés
 MOSO®

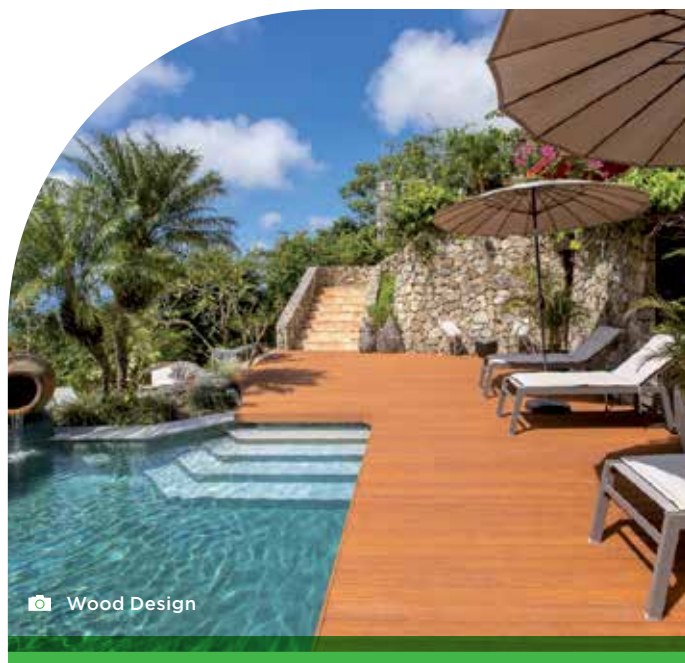
Higher Roch Tower (4000 m²) Montpellier, France



Quiet Studios
 Pedro Machado

Salty Hotel
(180 m²) Praia do Baleal, Portugal

Private Residence
Saint-Martin Island



Wood Design

MOSO® Bamboo N-durance® Outdoor Decking

MOSO® Bamboo N-durance® Decking is a solid, Outdoor-Density® board, made from compressed bamboo strips. Bamboo N-durance® has a warm caramel colour, resulting from a steam-pressure treatment of the bamboo material. A special crushing and compression technique increases the hardness and stability and provides Bamboo N-durance® with the highest durability class possible in the appropriate EU norms. Bamboo N-durance®'s end-match system enables an unlimited number of boards to be connected creating a visually infinite length. The special symmetrical shape offers the possibility to choose between either the grooved or the flat surface and allows for quick installation with MOSO® Fasteners. When exposed to outdoor conditions, the caramel colour of MOSO® Bamboo N-durance® will fade naturally.

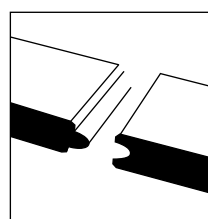
Standard Groove / Flat
(reversible board)



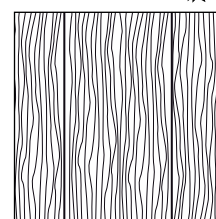
Curved



End-match system



Outdoor-Density®



P: Superficial preservative against surface fungi, **Sikkens:** Sikkens Cetol WF 771 Ipe
Ends of the boards are protected with Sikkens Kodrin WV 456 sealer.

Product Code	Surface	Finish	Edge groove	End-matched	Length edges	End edges	Dimensions (mm)
BO-DTC171G-01	Grooved/Flat	P + Sikkens	2 sides	Yes	R3	2 mm x 45°	1850x137x20
BO-DTC191G-C-01	Curved	P + Sikkens	2 sides	Yes	R3	2 mm x 45°	1850x155x20

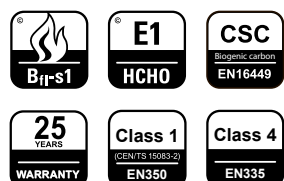
Installation summary

- Install a suitable, fixed, stable and durable sub frame. MOSO® recommends the use of MOSO® Thermo-Density or Outdoor-Density® Sub frame joists.
- Determine which side of the board will be used: the grooved or flat side.
- Fix the boards on the sub frame using fasteners (to be inserted in the edge grooves of the board) or alternatively with screws (through the surface).
- Use a 1-2% slope and ensure good ventilation of the decking.
Decking boards with the curved surface (BO-DTC191G-C) are designed to be installed without a slope. Thanks to the curved surface, fast water drainage from the the decking boards is guaranteed.
- After installation: make sure proper cleaning and maintenance is done.
- Bamboo N-durance® is supplied with a Sikkens Cetol WF 771 finish. In order to maintain the rich caramel colour it is recommended to maintain the decking with Sikkens Cetol WF 771 after one year.
- Periodic maintenance with Sikkens Cetol WF 771 is required to maintain the anti-surface fungi resistance.
- Periodic maintenance is required to retain the caramel colour and ensure the luxurious appearance.
- Store in a cool and dry place away from direct sunlight, and protected from weather influences, dirt and dust.
- For further info: please see the installation/maintenance instructions.
- Full version available on ▶ www.moso-bamboo.com/n-durance/decking

Technical characteristics and certifications

- Density: ± 1200 kg/m³
- Resistance to Indentation - Brinell Hardness: ± 9.5 kg/mm² (average value - EN 1534)
- Reaction to fire: Class Bfl-s1 (EN 13501-1)
- Slip resistance: R 10 (CEN/TS 16165 Annex B - DIN 51130)
- Thermal emittance: 0.89 (ASTM C1371)¹⁾
- Solar Reflectance (SR): 0.29 (ASTM C1549)¹⁾
- Solar Reflectance Index (SRI): Low 29, Medium 31, High 32 (ASTM E1980)¹⁾
- Modulus of Elasticity: 12090 N/mm² (mean value - EN 408)
- Bending strength: 99.6 N/mm² (characteristic value - EN 408)
- Biological durability: Class 1 according to EN 350 / CEN/TS 15083-2, simulated graveyard test / Class 1 according to EN 350 / EN 113-2 (CEN/TS 15083-1)
- Superficial preservatives and finish: comply with European biocide product regulation (BPR) and are not listed on the restrictions list of REACH Annex XVII/candidate list.
- Effectiveness against surface fungi: Class O, Strong fungi static (EN ISO 846), treatment only superficial.
- Use Class: Class 4 (EN 335)
- Environmental Product Declaration - EPD (EN 15804) (www.moso-bamboo.com/epd)
- FSC®: Products available with FSC® certification on request.
- Contribution LEED BD+C - v4: MR 1, MR 2, MR 3 (FSC®), EQ 2, SS 7
- v2009: MR 6, MR 7 (FSC®), IEQ 4.3, IEQ 4.4
- Contribution BREEAM: MAT 1, MAT 3 (FSC®), MAT 5 (HD)
- Guarantee: 25 years

¹⁾ Tested on 3 years weathered MOSO® Bamboo N-durance®.



Also available with FSC® certification.



The mark of responsible forestry
FSC® C002063



bream

Profile drawings available here ▶
www.moso-bamboo.com/outdoor-profile-drawings



MOSO® Bamboo N-durance® Outdoor Decking

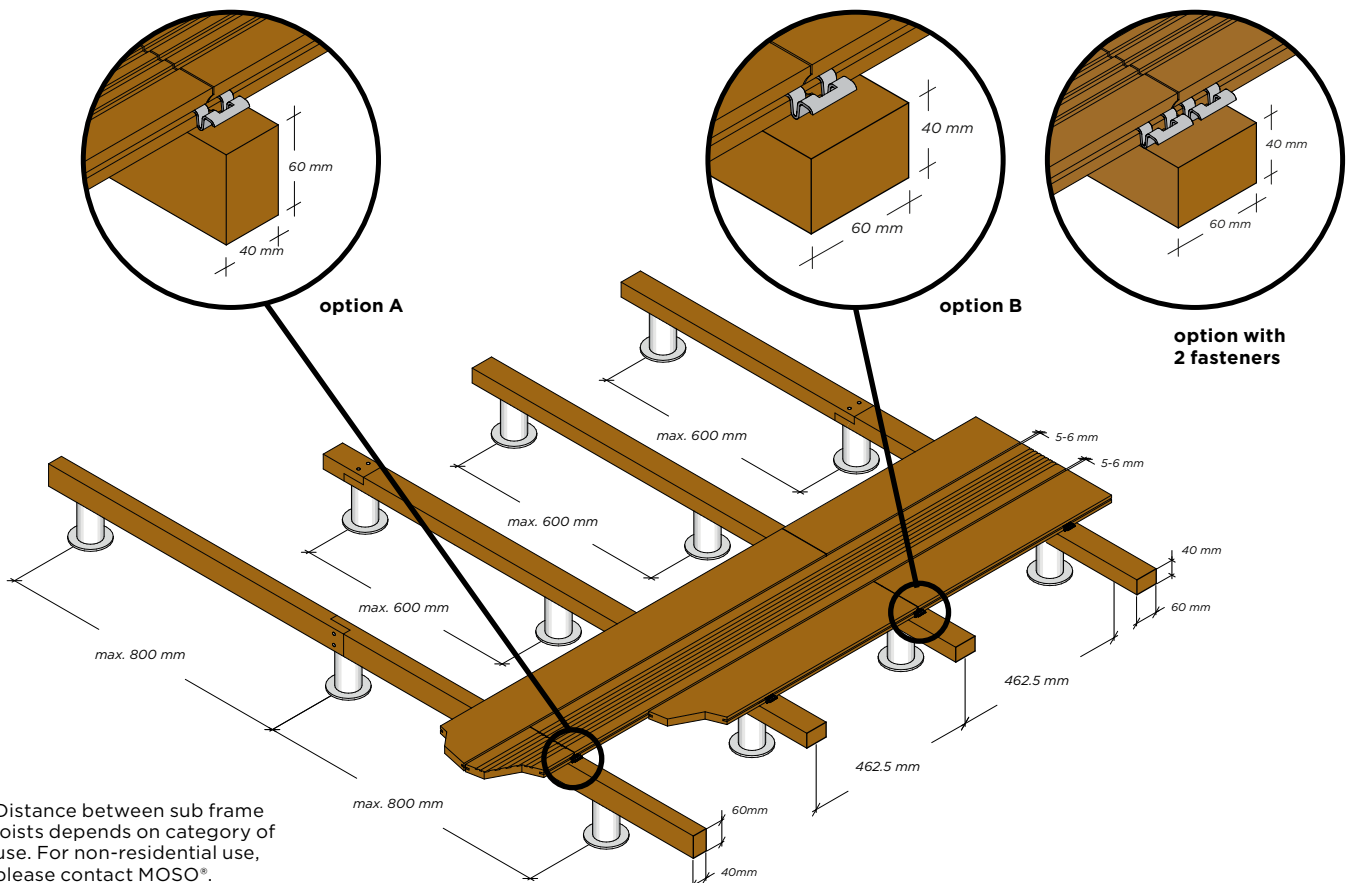
Installation instructions

Before installation

- Waterlogging under the decking must be avoided by preparing a water permeable ground structure. This can be achieved by sand layers and gravel dispersion above.
- Use cement/stone tiles 40-50 mm thick or pedestals, to support the sub frame (see drawing).
- Place a root barrier under the tiles or pedestals to prevent weeds growing under the decking.
- Install the decking boards with a slope of 1-2% to enable water to run off the surface.
- The decking with the curved surface BO-DTC191G-C-01 can be installed without a slope. Thanks to the curved surface, fast drainage from the boards is guaranteed.
- Ensure good ventilation of the decking by keeping at least 20 mm gap from walls and objects and avoid closing the decking at the sides. The gap between the boards must be open to ensure unrestricted ventilation.
- When the surface / soil underneath the decking is not fast drying, there should be at least 100 mm distance between the decking and the surface underneath.
- Use sub frame joists with the minimum size of 40x60 mm. MOSO® recommends the use of MOSO® Thermo-Density® or Outdoor-Density® Sub frame joists, which are specifically produced for use in combination with our decking products. Alternatively, suitable joists are those with the same durability class as the decking; aluminium sub frame joists, stable hardwood joists or pine joists. When using hardwood or pine as joists, make sure the moisture content of these joists is below 12%. Avoid direct contact with the soil.
- MOSO® Sub frame joists can be installed without gaps, connecting the joists with screws and glue suited for outdoor use. Other sub frame joists should be installed according to the instructions of the supplier.
- In order to create a stable deck frame, the outsides of the frame have to be connected at regular intervals to the ground/structure below. Alternatively cross bracing can be applied.
- Install the boards on sub frame joists with 462.5 mm space between the joists (centre-to-centre) so each board is supported by 5 joists. Always install the ends of the boards exactly on the joist. Distance between sub frame joist depends on category of use. For non-residential use, please contact MOSO®.
- If a random installation pattern is preferred, make sure that the sub frame joists (centre-to-centre) are no more than 300 mm apart.
- Always install cut off boards on at least 3 sub frame joists.

Please note

- The MOSO® Bamboo N-durance® Decking board is a natural product, which varies in colour, grain and appearance. Colour can quickly change from caramel to a lighter colour, depending on the maintenance schedule.
- Small cracks and splinters on the surface and on the ends of the boards can arise from the different drying characteristics of the surface and cross cut ends. The surface will also get rougher over time. This phenomenon is normal for most wood species and is minimised for this product by its unique 'Outdoor-Density®' production method. Cracks on the board ends can be further minimised by applying sealer to the ends of the boards (see 'the installation').
- Splinters and roughness can be removed by cleaning the surface of the decking with the silicon carbide broom or machine disk which MOSO® supplies. The surface will become smoother and splinters are removed.
- Dimensional changes or cupping of the boards can occur after installation. This phenomenon is normal for most wood species and is minimised for this product by its unique Outdoor-Density® production process.
- When using the flat side of the boards as surface please note that deformation under influence of climate will be more visible. Some deformation and/or cupping of the material can occur. This phenomenon is normal for outdoor exposed wood and cannot be grounds for a claim.
- If the product is installed in a (partly) closed area, such as a conservatory or a under a canopy, where the ventilation is limited, superficial fungi may appear on the surface. This is a normal phenomenon: the fungi can easily be cleaned with a damp cloth and will not affect the material. To avoid this problem, sufficient ventilation has to be provided in the area.



MOSO® Bamboo N-durance® Outdoor Decking

Installation instructions

The installation

- Keep at least 5-6 mm gap between the boards (in width direction). With MOSO® Fastener installation this is automatically the case.
- Due to the stability of the boards and the end-match system, no expansion gap is needed on the ends of the boards.
- Every cut end has to be treated with board end sealer, to prevent water penetration. A sealer is available from MOSO®.
- Periodic maintenance with Sikkens Cetol WF 771 is required to maintain the warm caramel colour and the anti-surface fungi resistance. For decking finished with Sikkens Cetol WF 771 the first maintenance can be performed after one year.

Installation with fasteners

- Determine the surface side of the boards (grooved or flat surface).
- Use the MOSO® Asymmetric Fasteners in the following sequence:
 - Press fastener with hooked side in the edge groove of one board.
 - Pre-drill the joist screw holes 30 mm deep. On bamboo joists: use a 3.5 mm wide drill bit 110 mm long.
 - Fully tighten the screw. Always screw vertically to the joist. Apply low torque with slow screwing speed on the screwing machine. Perform some tests for correct torque and speed adjustment before full installation.
- Install every following board by sliding it under the waved side of the fasteners.
- Use approx. 20 fasteners per m². When the tongue and groove are connected on the joist, use 1, preferably 2 fasteners, 1 for every board (see drawing options A/B).
- For bamboo or wood joists only use the included stainless steel decking screws (4.5x30 mm).

Screw down installation

- Determine the surface side of the boards (grooved- or flat surface).
- Pre-drill the screw holes 20 mm from the side of the board. Be sure to pre drill with a large enough drill (80% of screw diameter) to avoid cracking of the decking.
- Always screw both sides (left and right in the width direction) of the board.
- Use at least A2 grade stainless steel decking screws (approx. 5x50 mm).

Cleaning and maintenance

MOSO® Bamboo N-durance® Decking is pre-finished, on both sides, with Sikkens Cetol WF 771.

- Clean and maintain the decking at least once per year with Woca Exterior Wood Cleaner and silicon carbide broom or -disk. Depending on climate and use it may be necessary to perform cleaning and maintenance more than once per year.
- Remove the dirty water residue on the boards with clean water and let the surface dry.
- Apply 1-2 new layers of Sikkens Cetol WF 771. When a new finish is not applied once a year, depending on the situation, the decking will change in colour. Surface fungi may occur, but this has no effect on the material's integrity or fitness for use.
- It is advisable to keep the decking free from dust and dirt as much as possible (clean by broom regularly).

Storing

Store MOSO® Bamboo N-durance® in a cool and dry place away from direct sunlight, and protected from weather influences, dirt and dust.

Additional note

Whilst all due care is taken to ensure the accuracy of the installation instructions, individual circumstances (location, sub floor and installation procedures) may vary and are beyond the manufacturer's control. In case of doubt, therefore, consult the distributor. Always follow the local building code.

These instructions are subject to change. For the latest version visit www.moso-bamboo.com/n-durance

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MOSO® Bamboo N-durance® Outdoor Decking

Accessories

MOSO® Fasteners

With these fasteners MOSO® Bamboo N-durance® Decking can be easily installed. When installed correctly there will be 5-6 mm gaps between the boards. The fasteners are supplied with matching stainless-steel screws (square bit). For installation on aluminium sub frame joist (not provided by MOSO®), special screws are available.

Product Code	Item	Material	Colour	Dimensions fastener (mm)	Dimensions screw (mm)
CLIP-SCREWBX08	Fastener Asymmetric with screw (20 mm)	Stainless-steel A2 (AISI304)	Brown	27x22.5x10.8	4.5x30
CLIP-SCREWBX08-316	Fastener Asymmetric with screw (20 mm)	Stainless-steel A4 (AISI316)	Brown	27x22.5x10.8	4.5x30
CLIP-BX08	Fastener Asymmetric without screw (20 mm)	Stainless-steel A2 (AISI304)	Brown	27x22.5x10.8	
CLIP-BX08-316	Fastener Asymmetric without screws (20 mm)	Stainless-steel A4 (AISI316)	Brown	27x22.5x10.8	
CLIP-SCREWBX802	Fastener Start/End Top with screw (20 mm)	Stainless-steel A2 (AISI304)	Brown	29x25x11.2	4.5x30
CLIP-SCREWBX802-316	Fastener Start/End Top with screw (20 mm)	Stainless-steel A4 (AISI316)	Brown	29x25x11.2	4.5x30
SCREW-09	Screw for aluminium sub frame joist	Stainless-steel A2 (AISI304)	Brown		4.2x20

CLIP-SCREWBX08
CLIP-BX08



CLIP-SCREWBX802



Recommended number of fasteners/m²

Board width	Decking*
137 mm	~20 pcs/m ²
155 mm	~17 pcs/m ²

SCREW-09



*) Based on distance of 462.5 mm between the sub frame joist centres.



MOSO® Bamboo Outdoor additional products

MOSO® recommends the use of Bamboo Thermo-Density® or Outdoor-Density® Sub frame joists, which are specifically produced for use in combination with MOSO® Decking. The MOSO® Bamboo N-durance® Fascia board and Edge profile are intended for an elegant finish of the sides of the decking. Fascia boards are installed vertically against the sides of the deck to cover the sub frame joists. Edge profiles can also be used to create stairs.

BO-SB155



BO-SB355



BO-DTC171G1-01



BO-DTCBN171G-01



Product Code	Item	Finish	Dimensions (mm)
BO-SB355	Sub frame joist Outdoor-Density®	Unfinished	2440x60x40
BO-SB155	Sub frame joist Thermo-Density®	Unfinished	2440x60x40
BO-DTC171G1-01	Fascia board, 1 edge groove	Sikkens Cetol WF 771 Ipe	1850x137x20
BO-DTCBN171G-01	Edge profile, 2 edge grooves	Sikkens Cetol WF 771 Ipe	1850x65x30/20



MOSO® Bamboo N-durance® Outdoor Decking

Cleaning & maintenance

Maintenance with Sikksens Cetol WF 771

The surface of decking becomes weathered under the influence of wind, rain, frost and sunshine (UV). As a result, the surface turns grey, dirty and cracks/splinters will appear. The maintenance and cleaning of the MOSO® Bamboo N-durance® decking is similar to other tropical wood. Use an exterior wood cleaner to remove dirt from the surface, MOSO® recommends Woca Exterior Wood Cleaner. Sikksens Cetol WF 771 water based finish is recommended for optimal protection and bringing back the warm caramel colour.

Cleaning

- Soak MOSO® Bamboo N-durance® with plenty of water. If possible use a garden hose. Do not use high-pressure cleaners.
- Mix Woca Exterior Wood Cleaner with water in the ratio 1:2 and apply it. If the decking is extremely dirty, Woca Exterior Wood Cleaner may be used undiluted. If another cleaning product is used, the usage may be different. Check the instructions of the product.
- Clean the decking with a silicon carbide broom or machine disk (see accessories). Scrub the soaked material lengthwise following the bamboo grain until the material appears clean. If the decking has been installed flat side up, first scrub under an angle of 45 degrees before scrubbing in the length direction. When using a machine disk this is not necessary.
- Repeat the cleaning if necessary. In case deeper stains remain or if there are areas where Sikksens Cetol finish remains on the surface of the material, we recommend sanding (100 grit, in length grain direction).
- Clean the surface by rinsing thoroughly with clean water to ensure the surface is clean before oiling.

- Leave MOSO® Bamboo N-durance® to dry for approx. 24 hours. The material must be completely dry before you can apply the water-based finish Sikksens Cetol WF 771.
- If the surface was sanded, it must first be prepared with a water-based Sikksens primer before applying the finish.

Application of finish

- Always make sure the decking is clean, dry, free of dust or dirt, and without any coating. Never work on a deck in direct sun.
- Apply in dry weather only. Avoid direct sunlight and high temperatures.
- For sanded or previously unfinished boards, to prepare the surface for the finish, apply a layer of Sikksens Cetol WP 567 BPD. Make sure it is fully dried before applying the finish in the next step.
- Stir the Sikksens Cetol finish before and during the application to avoid colour variation.
- Apply a thin layer of finish with a pad, a brush, or with an air gun (35 to 65 bar) on the working surface.
- Important: remove any excess product before it dries, to avoid any dripping or glossy areas. The finish must penetrate the material and not remain on the surface, so that it dries leaving a matt look.
- Pay attention to the ends of the joists and cut ends of the boards, which tend to absorb more water, and finish well to prevent water penetration. A sealer is available from MOSO®.

Theoretical consumption

- Mix Woca Exterior Wood Cleaner with water in the ratio 1:2 and apply it. If the decking is extremely dirty, exterior cleaner may be used undiluted.
- Sikksens Cetol WP 567 BPD: 6 - 8 m² / litre
- Sikksens Cetol WF 771 for the first treatment: 10 - 12 m² / litre (for 1 coat of finish).
- Sikksens Cetol WF 771 for periodic maintenance: 14 - 15 m² / litre (for 1 coat of finish).

Maintenance of flat surface

Please be aware of the fact that on the flat surface, irregularities in the surface (e.g. cracks, splinters) are more visible than on the grooved surface. If regular maintenance with Sikksens Cetol WF 771 is performed, this will be reduced.

Risk of self-ignition

Due to the risk of self-ignition it is important that oil-wetted cloths are soaked in water and are disposed in a tightly closed container after use. For more details, check the instructions of the finish supplier.

SEALER-05
Sealer for ends of boards 250 ml



DISK-02
16" Silicon carbide disk



BROOM-02
Silicon carbide broom



CLEANER-WOCA-01
Woca Exterior Wood Cleaner 2.5 ltr



SATURATOR-SIK01
Sikksens Cetol WF 771 Ipe colour 10 ltr
SATURATOR-SIK02
Ipe colour 2.5 ltr



SATURATOR-SIK03
Sikksens Cetol WF 771 Savanna colour 10 ltr
SATURATOR-SIK04
Savanna colour 2.5 ltr



PRIMER-SIKKENS-01
Sikksens Cetol WP 567 BPD 2.5 ltr



Check out the maintenance and cleaning movie at:
www.moso-bamboo.com/youtube/n-durance





 40603 kg CO₂
 Landmark Vastgoed Management BV
 Hans Gorter

MOSO® Headoffice (1100 m²) Zwaag, the Netherlands



Awood Headoffice
Uden, the Netherlands

MOSO® Headoffice
(1100 m²) Zwaag, the Netherlands



MOSO® Bamboo N-durance® Outdoor Cladding

Closed profile

MOSO® Bamboo N-durance® Cladding is a solid, Outdoor-Density® board, made from compressed bamboo strips. Bamboo N-durance® has a warm caramel colour, resulting from a steam-pressure treatment on the bamboo material. A special crushing and compression technique increases the hardness and stability and provides MOSO® Bamboo N-durance® with the highest durability class possible within the appropriate EU norms. The cladding with closed profile is developed to meet the highest fire requirements and is installed with a hidden screw. The Sikkens Cetol Savanna finish gives Bamboo N-durance® Cladding boards a lighter colour, providing a very elegant amber-coloured appearance.

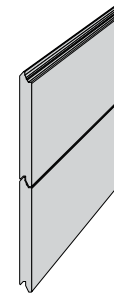
Closed profile
65 mm



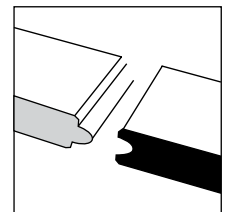
Closed profile
100 mm



Closed profile
137 mm



End-matched



P: Superficial preservative against surface fungi, **Sikkens:** Sikkens Cetol WF 771 Savanna
Ends of the boards are protected with Sikkens Kodrin WV 456 sealer.

Product Code	Profile	Finish	Surface	End-matched	Length edges	End edges	Effective width (mm)	Dimensions (mm)
BO-DTC537-02	Closed	P + Sikkens	Flat	Yes	R1	2 mm x 45°	52,5	1850x65x18
BO-DTC536-02	Closed	P + Sikkens	Flat	Yes	R1	2 mm x 45°	87,5	1850x100x18
BO-DTC531-02	Closed	P + Sikkens	Flat	Yes	R1	2 mm x 45°	124,5	1850x137x18

Installation summary

- Fix the vertical battens using screws going through the membrane into the wall construction behind. This creates a rigid/flat surface for installation of the boards.
- In case of vertical installation: On top of these vertical battens, add a set of horizontal battens creating a rigid/flat surface onto which the boards can be fixed.
- Horizontal installation:
 - Start with the lowest row of boards and make sure they are placed fully level (using a spirit level).
 - Make sure a ventilation gap (7-10 mm) is kept on the edge of the cladding.
 - Place boards on top of the existing row and make sure no seams/gaps exist between the boards.
- Vertical installation:
 - Start with the first row of boards and make sure they are placed completely vertical (using a spirit level).
 - Make sure a ventilation gap (7-10 mm) is kept on the edge of the cladding. Ensure the tongue of the board end is positioned upwards, to avoid water staying in the groove.
 - Place boards on top of the existing row and make sure no seams/gaps exist between the boards.
- The cladding can be left without any maintenance, but take into consideration that without maintenance and re-applying Sikkens Cetol WF 771 Savanna the cladding will develop a rougher, fissured surface that will lighten quicker and the caramel colour of MOSO® Bamboo N-durance® will fade naturally..
- MOSO® guarantees the bamboo material and the mounting materials (screw) it supplies but does not guarantee the connection with other materials (such as sub frame joist/battens). It is the responsibility of the installer to make sure the screws used match such materials during the full lifetime of the product.
- Store in a cool and dry place away from direct sunlight, and protected from weather influences, dirt and dust.
- Full version available at: ▶ www.moso-bamboo.com/n-durance/cladding

Technical characteristics and certifications

- Density: ± 1200 kg/m³
- Resistance to Indentation - Brinell Hardness: ± 9.5 kg/mm² (average value - EN 1534)
- Reaction to fire: Class B-s1-d0 (EN 13501-1)¹⁾
- Thermal emittance: 0.89 (ASTM C1371)²⁾
- Solar Reflectance (SR): 0.29 (ASTM C1549)²⁾
- Solar Reflectance Index (SRI): Low 29, Medium 31, High 32 (ASTM E1980)²⁾
- Modulus of Elasticity: 12090 N/mm² (mean value - EN 408)
- Bending strength: 99.6 N/mm² (characteristic value - EN 408)
- Biological durability: Class 1 (EN 350 / CEN/TS 15083-2), simulated graveyard test / Class 1 (EN 350 / CEN/TS 15083-1)
- Superficial preservatives and finish: comply with European biocide product regulation (BPR) and are not listed on the restrictions list of REACH Annex XVII/candidate list
- Effectiveness against surface fungi: Class 0, Strong fungi static (EN ISO 846), treatment only superficial.
- Use Class: Class 4 (EN 335)
- Environmental Product Declaration - EPD (EN 15804) (www.moso-bamboo.com/epd)
- FSC®: Products available with FSC® certification on request.
- Contribution LEED BD+C - v4: MR 1, MR 2, MR 3 (FSC®), SS 7 v2009: MR 6, MR 7 (FSC®)
- Contribution BREEAM: MAT 1, MAT 3 (FSC®), MAT 5 (HD)
- Guarantee: 25 years

¹⁾ Tested on 18 mm thickness, without gaps between boards, with ventilation space behind boards.
²⁾ Tested on 3 years weathered MOSO® Bamboo N-durance®.



Also available with FSC® certification.



The mark of responsible forestry
FSC® C002063



breeam

Profile drawings available here ▶ www.moso-bamboo.com/outdoor-profile-drawings





RUD Ketten

RUD Ketten Solaris sun lounger Germany



FURNS®
ADEZZ®

FURNS benches
The Netherlands

Husson furniture - Paysalia trade show
France



MOSO® Bamboo N-durance® Outdoor Beams

MOSO® Bamboo N-durance® Outdoor Beams are solid, Outdoor-Density® finished beams, made from compressed bamboo strips. The pre-profiled rounded edges make MOSO® Bamboo N-durance® Outdoor Beams ideal for use in outdoor furniture products, façade cladding and other applications. A special crushing and compression technique increases the hardness and stability and provides Bamboo N-durance® with the highest durability class possible in the appropriate EU norms. As with tropical hardwoods, the colour of the material changes under the influence of wind, rain, frost and sunshine (UV-light). Regular cleaning and maintenance protects the material from this weathering and brings back the rich caramel colour.

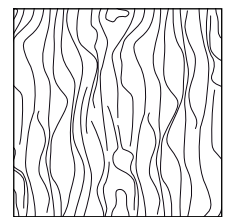
BO-DTC2170-2-01-FP
2000 x 115 x 40 mm



BO-DTC2173-2-01-FP
2000 x 40 x 40 mm



Outdoor-Density®



Product Code	Finish	Edges (also on ends)	Dimensions (mm)
BO-DTC2170-2-01-FP	Sikkens Cetol WF 771 Ipe	R4	2000x115x40
BO-DTC2175-2-01-FP	Sikkens Cetol WF 771 Ipe	R4	2000x90x40
BO-DTC2171-2-01-FP	Sikkens Cetol WF 771 Ipe	R4	2000x80x40
BO-DTC2172-2-01-FP	Sikkens Cetol WF 771 Ipe	R4	2000x60x40
BO-DTC2174-2-01-FP	Sikkens Cetol WF 771 Ipe	R4	2000x55x40
BO-DTC2173-2-01-FP	Sikkens Cetol WF 771 Ipe	R4	2000x40x40

Other dimensions, bevel and finish can be produced custom made.

Installation summary

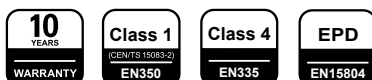
- To allow natural shrink- and swell behaviour, install beams with a minimum of 4 mm spacing.
- MOSO® Bamboo N-durance® Beams must be mechanically fixed, using screws/bolts. The fixation instruction depends on the application.
- Use A2 stainless steel screws/bolts.
- For all our standard size beams, except 40x40 mm, we advise a minimum of 2 screws per fixing point. 40x40 mm beams can be fixed with 1 screw per fixing point.
- Horizontal installation:
 - The number of fixation points is depending on the application and applicable load.
 - In general, a 2 meter beam should at least have 3 fixation points (2 on the sides and 1 connection in the middle).
- Vertical installation:
 - Beam ends should be angled (min. 15°) to improve water drainage.
 - Beams longer than 1 meter have to be fixed in at least 3 points.
- To avoid cracks caused by excessive water uptake, the (cut) ends of the beams must be treated with a sealer (SEALER-05).
- Bamboo N-durance® will naturally weather. If it is preferred to keep close to the original colour, maintenance should be done with Sikkens Cetol WF 771 (SATURATOR-SIK02) or a similar waterbased finish. More information about cleaning and maintenance:
 - www.moso-bamboo.com/n-durance/beams/cleaning-maintenance
- Periodic maintenance will be required to maintain the anti-surface fungi resistance.
- Store in a cool and dry place away from direct sunlight, and protected from weather influences, dirt and dust.
- Full version available on ► www.moso-bamboo.com/n-durance/beams

Technical characteristics and certifications

- Density: ± 1200 kg/m³
- Resistance to Indentation - Brinell Hardness: ± 9.5 kg/mm² (average value - EN 1534)
- Reaction to fire: Class B-s1-d0 (EN 13501-1)¹⁾
- Thermal emittance: 0.89 (ASTM C1371)²⁾
- Solar Reflectance (SR): 0.29 (ASTM C1549)²⁾
- Solar Reflectance Index (SRI): Low 29, Medium 31, High 32 (ASTM E1980)²⁾
- Modulus of Elasticity: 12090 N/mm² (mean value - EN 408)
- Bending strength: 99.6 N/mm² (characteristic value - EN 408)
- Biological durability: Class 1 (EN 350 / CEN/TS 15083-2), simulated graveyard test / Class 1 (EN 350 / CEN/TS 15083-1)
- Superficial preservatives and finish: comply with European biocide product regulation (BPR) and are not listed on the restrictions list of REACH Annex XVII/candidate list
- Effectiveness against surface fungi: Class 0, Strong fungi static (EN ISO 846), treatment only superficial
- Use Class: Class 4 (EN 335)
- Environmental Product Declaration - EPD (EN 15804) (www.moso-bamboo.com/epd)
- FSC®: With FSC® certification
- Contribution LEED BD+C - v4: MR 1, MR 2, MR 3 (FSC®), SS 7 v2009: MR 6, MR 7 (FSC®)
- Contribution BREEAM: MAT 1, MAT 3 (FSC®), MAT 5 (HD)
- Guarantee: 10 years

¹⁾ Tested on board material with 18 mm thickness, without gaps between boards, with ventilation space behind boards.

²⁾ Tested on 3 years weathered MOSO® Bamboo N-durance®.



The mark of responsible forestry
FSC® C002063



breeam

Profile drawings available here ►
www.moso-bamboo.com/outdoor-profile-drawings



MOSO® Bamboo N-durance® Outdoor Decking & Cladding **User information**

Appearance and colour

MOSO® Bamboo N-durance® is a natural product, which can vary in colour, grain and appearance. Colour will change over time depending on the maintenance schedule. The boards have a warm caramel colour when installed, which can change in colour several weeks after installation.

If a warm caramel colour is preferred, maintenance should be done with Sikkens Cetol WF 771 or a similar water-based finish.

Decking: Periodic maintenance with Sikkens Cetol WF 771 is required to maintain the warm caramel colour and the anti-surface fungi resistance. For decking finished with Sikkens Cetol WF 771 the first maintenance can be performed after one year.

For further details see the decking installation and maintenance instructions:

www.moso-bamboo.com/n-durance

Cladding: The cladding can be left without any maintenance, but take into consideration that without maintenance and re-applying Sikkens Cetol WF 771 Savanna the cladding will develop a rougher, fissured surface that will lighten quicker and the caramel colour of MOSO® Bamboo N-durance® will fade naturally.

MOSO® Bamboo N-durance® shows similarity to other hardwoods in grain and structure. The characteristic bamboo nodes however can still be recognised and give the product a special and lively look.

Decking around a swimming pool

If MOSO® Bamboo N-durance® Outdoor Decking is to be used around swimming pool areas, the following has to be taken into account: MOSO® Bamboo N-durance® is a natural (wood like) product. As with any wooden product used outdoors, there is always a risk of formation of splinters, however splinters from MOSO® Bamboo N-durance® are normally smaller than (tropical) hard wood splinters. A regular application of a finish (more frequently necessary around swimming pools) is required to reduce the formation of splinters. Furthermore, regular maintenance with the silicon carbide broom or disk is required to effectively remove splinters and smoothen the surface. The boards must be installed in such a way that the surface water cannot flow directly into the pool. Also bear in mind that treated swimming pool water contains salt and chlorine which can cause the boards around the pool to “weather” and become bleached faster than the boards in areas not exposed to the swimming pool water.

Normal phenomena

Cracks on the surface and on the ends of the boards can occur due to the different drying characteristics of the surface and board ends. This does not affect the stability or durability of the board.

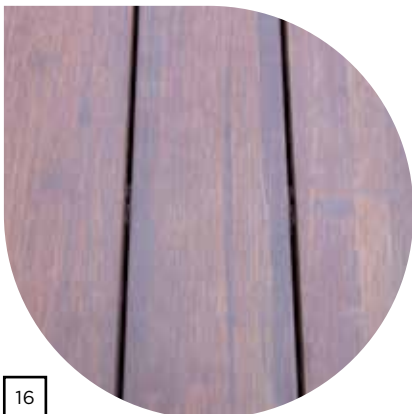
The surface side of the boards will become rougher over time and can form (small) splinters as a result of continuous water absorption and desorption due to dry and wet weather periods. Dimensional change or cupping of the boards can occur after installation. These phenomena are normal for most hardwood species and MOSO® Bamboo N-durance®.

After installation, there might be some bleeding or leaching of colour from the bamboo material when it gets wet, e.g. when it rains. This possible bleeding is typical for wood and will disappear over time. The brownish liquid can easily be cleaned from the Bamboo N-durance® material, however controlled water drainage and prevention of splash water is required to prevent any discoloration of surrounding or underlying building components.

Maintenance of flat surface

When using the flat side of the boards as top surface please note that deformation under influence of climate may be more visible. Some deformation and/or cupping of the material can occur. This phenomenon is normal for outdoor exposed wood and cannot be grounds for a claim.

dry condition



wet condition



MOSO® Bamboo N-durance® Outdoor Beams

User information

Appearance and colour

MOSO® Bamboo N-durance® is a natural product, which can vary in colour, grain and appearance. Colour will change over time depending on the maintenance schedule. The beams have a warm caramel colour when installed, which can change in colour several weeks after installation.

Bamboo N-durance® will naturally weather. If it is preferred to keep close to the original colour, maintenance should be done with Sikksens Cetol WF 771 or a similar water-based finish. Periodic maintenance will be required to maintain the anti-surface fungi resistance.

For further details see the processing, installation & maintenance instructions:
www.moso-bamboo.com/n-durance/beams

MOSO® Bamboo N-durance® shows similarity to other hardwoods in grain and structure. The characteristic bamboo nodes however can still be recognised and give the product a special and lively look.

Normal phenomena

Cracks on the surface and on the ends of the beams can occur due to the different drying characteristics of the surface and beam ends. This does not affect the stability or durability of the beam.

The surface side of the beams will become rougher over time and can form (small) splinters as a result of continuous water absorption and desorption due to dry and wet weather periods. Dimensional change or cupping of the beams can occur after installation. These phenomena are normal for most hardwood species and MOSO® Bamboo N-durance® and cannot be grounds for a claim.

After installation, there might be some bleeding or leaching of colour from the bamboo material when it gets wet, e.g. when it rains. This possible bleeding is typical for wood and will disappear over time. The brownish liquid can easily be cleaned from the Bamboo N-durance® material, however controlled water drainage and prevention of splash water is required to prevent any discoloration of surrounding or underlying building components.

Test results of MOSO® Bamboo N-durance®

The excellent performance of MOSO® Bamboo N-durance® has been extensively tested by acknowledged research institutes. Find a summary of the most important test results below. Full reports are available upon request. **Only MOSO® can ensure you have the original, unique Bamboo N-durance® product.** Other products that copy the original do not offer the same quality and level of durability, dimensional stability and ecology. With a look-alike product, there is a large risk of claims after installation. Always ask for the original MOSO® Bamboo N-durance® products!

Classification Durability Class					
Use Class	1. very durable	2. durable	3. moderately durable	4. slightly durable	5. not durable
1 interior	o	o	o	o	o
2 moist interior	o	o	o	(o)	(o)
3 exterior, above ground	o	o	(o)	(o)-(x)	(o)-(x)
4 ground contact / fresh water	o	(o)	(x)	x	x
5 salt water	*	(x)	(x)	x	x

o Natural durability sufficient.
 (o) Natural durability normally sufficient, but for certain end uses treatment may be advisable.
 (o)-(x) Natural durability may be sufficient, but depending on end use, preservative treatment may be necessary.
 (x) Preservative treatment is normally advisable.
 x Preservative treatment necessary.
 * Natural durability of Bamboo N-durance® not tested in salt water.

Durability

EN 350 / CEN/TS 15083-2
EN 350 / EN 113-2
(CEN/TS 15083-1)

class 1

Use/risk class

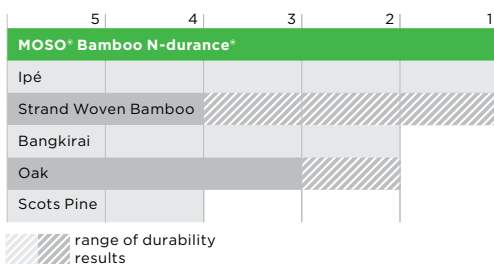
EN 335

class 4

Durability class

Class 1

EN 350 (CEN/TS 15083-2) and EN 350 / EN 113-2 (CEN/TS 15083-1)



Average brinell hardness

± 9.5 kg/mm²

(EN 1534)

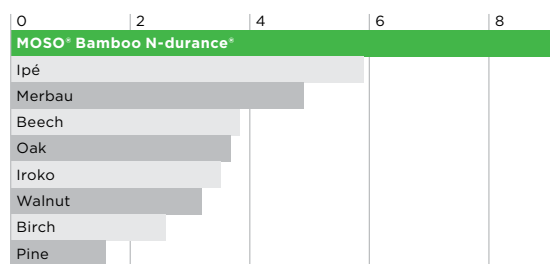


Table 2: Results of the durability test of "MOSO Bamboo N-durance (outdoor)"

Test fungus	mean dry mass loss (n = 20) [%]	median dry mass loss (n = 20) [%]	percentage of specimens in DC classes [%]					durability classification (see table 3)
			DC 1	DC 2	DC 3	DC 4	DC 5	
<i>C. puteana</i>	1,8 ± 1,1	2,2	100	0	0	0	0	1
<i>R. placenta</i>	1,5 ± 0,9	1,3	100	0	0	0	0	1
<i>G. trabeum</i>	1,6 ± 1,0	1,5	100	0	0	0	0	1
<i>T. versicolor</i>	1,6 ± 0,8	1,5	100	0	0	0	0	1
<i>P. ostreatus</i>	3,7 ± 1,0	3,7	95	5	0	0	0	1
<i>D. expansa</i>	0,9 ± 1,0	0,5	100	0	0	0	0	1

Final DC classification: 1 (very durable)

Table 2: Durability classification for "MOSO Bamboo N-durance (outdoor)" based on dry mass losses

Reference timber	x-value according to EN 350	durability class (DC), see table 3
European beech	0,09	DC 1 "very durable" (73 % of all specimens DC 1 and 27 % DC 2)

Final durability classification: DC 1 "very durable"

Table 2: Rating¹ of the growth on the specimen surface / agar surface

	sp. 1	sp. 2	sp. 3	sp. 4	sp. 5
Fungus mix I (EN 846)	2/5	0/5	0/5	0/5	0/5
Fungus mix II (discolouring moulds)	0/0	0/0	2/3	0/5	0/5

¹⁾ Rating scale

- 0 no growth detectable at microscopic inspection
- 1a growth detectable by microscopic inspection on max. 25 % of the test surface
- 1b growth detectable by microscopic inspection on max. 50 % of the test surface
- 1c growth detectable by microscopic inspection on more than 50 % of the test surface
- 2 growth visible to the naked eye on max. 25 % of the test surface
- 3 growth visible to the naked eye on max. 50 % of the test surface
- 4 growth visible to the naked eye on more than 50 % of the test surface
- 5 heavy growth on the whole test surface

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 12 of EN 13501-1:2018.

4.2 CLASSIFICATION

The product, **MOSO® Bamboo N-durance**, in relation to its reaction to fire behaviour is classified:

B_s

The additional classification in relation to smoke production is:

s1

Reaction to fire classification: B_s - s1

Test Report NO: SMPB2104000111FF Date: Apr. 27, 2021 Page 3 of 6

IV. Classification and field of application

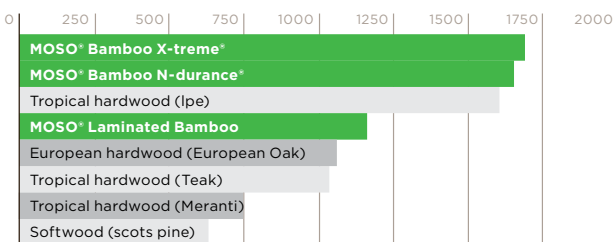
a) **Reference of classification**
This classification has been carried out in accordance with EN 13501-1:2018. The classes with their corresponding fire performance are given in annex A.

b) **Classification**
The product, in relation to its reaction to fire behaviour is classified:

TEST Classification	Class B B-s1, B-s1-d0
---------------------	--------------------------

c) **Field of application**
This classification is valid for the following end use applications:
 --- With an air gap, joint fasteners
 --- Fixed mechanically
 --- Horizontal and vertical orientation
 --- Free standing
 --- Joints in the long and short wings

Test results from EPH (Entwicklungs- und Prüflabor Holztechnologie GmbH), Efectis and SGS.



in kg CO₂ eq/m³ product

Durability

EN 350 / CEN/TS 15083-2
EN 350 / EN 113-2
(CEN/TS 15083-1)

class 1

Resistance against surface fungi

EN ISO 846:2019

resistant to wooddiscolouring fungi

class 0

Fire resistance

EN 13501-1

decking

class Bfl-s1

cladding, beams

class B-s1-d0

Carbon footprint

CSC (Construction Stored Carbon)
EN 16449 - biogenic carbon
1,637 kg CO₂
per m³

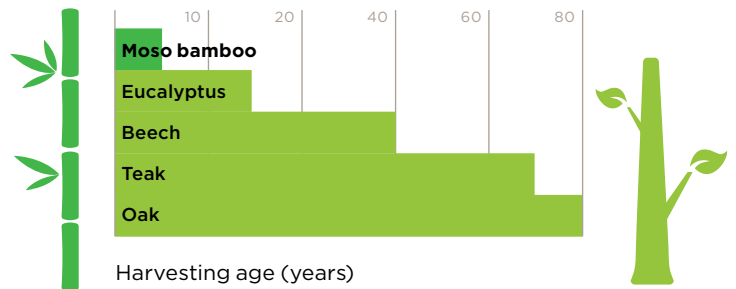
Bamboo N-durance®: the sustainable choice

MOSO® Bamboo N-durance® offers sustainable advantages. The inclusion of Bamboo N-durance® contributes to a higher LEED, BREEAM, Green Star, HQE and DGNB certification score for green building projects. That's one of the reasons why you can find MOSO® Bamboo N-durance® and other MOSO® products in many sustainable reference projects all over the world. FSC® is globally recognised as one of the best and most stringent responsible forestry certification system in the wood industry. MOSO® can provide, on prior request, all solid bamboo products with an FSC®-certification.

Unsurpassed growing speed

Bamboo: the fastest growing plant in the world

Because of the fast growth, Moso bamboo is managed as an agricultural crop: the annual harvest of the 4 to 5-year-old stems - compared to 60-80 years for tropical hardwood! - provides a steady annual income to farmers and stimulates the bamboo plant to reproduce even faster. Therefore, by default, no deforestation occurs with production of MOSO® Bamboo N-durance®, while large amounts of CO₂ are captured in the bamboo forests and products (www.inbar.int/understanding-bamboos-climate-change-potential).



Discover the
building material
of the future

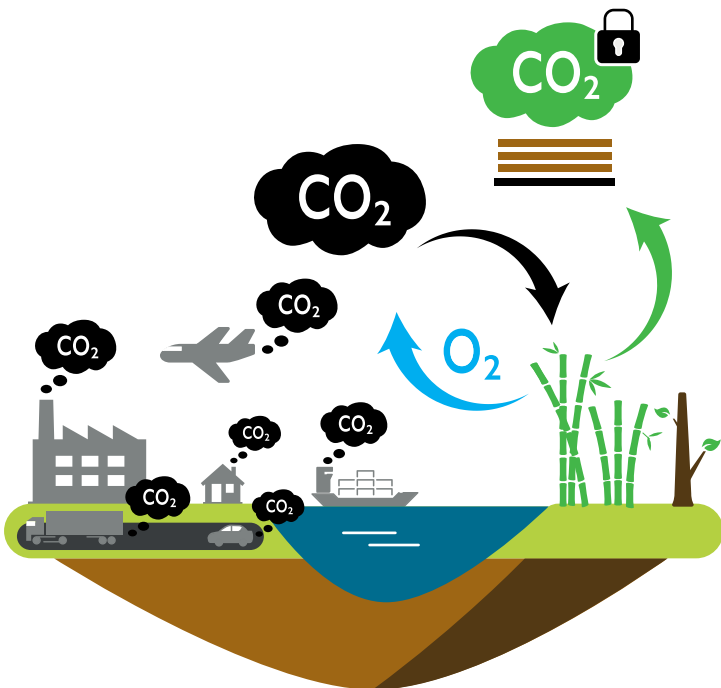


The mark of
responsible forestry
FSC® C002063

Carbon storage in bamboo

Biobased materials act as CO₂ sinks




Through photosynthesis, plants absorb carbon dioxide (CO₂) and convert it into glucose (building block for biomass) and oxygen. The CO₂ is stored in the material for the lifetime of the product, and even longer if the product is recycled into new, durable products. Due to the fast growth - and related high yields - Moso bamboo locks far more CO₂ in durable products compared to wood species. The locked amount of CO₂ can be calculated rather simply by looking at the density of the material and taking into account the biobased content. For example, Bamboo N-durance® locks just over 1.635 kg CO₂ per m³ of bamboo, which is the equivalent to the CO₂ emitted by a mid-range car driving 13.750 km.



Check out how
bamboo can save
the world at:
www.moso-bamboo.com/sustainability



Discover the full range of **MOSO[®] Bamboo Outdoor**

 2130240 kg CO₂
 Kengo Kuma
 Red Sea Global -
The St. Regis Red Sea Resort

The Red Sea – The St. Regis Red Sea Resort - Bamboo X-treme[®] Decking and **Beams** installed above the sea to ensure resilience against the natural elements - (42445 m²) Red Sea, Saudi Arabia




 BRT Architecten
 Awood
 Ronnie Zeemering

Notiz Hotel NHL Stenden - Bamboo X-treme[®] Cladding installed to reflect the “dressing” of a chocolate cake - (1200 m²) Leeuwarden, The Netherlands

Oxygen La Défense Paris - Bamboo X-treme[®] Outdoor Beams installed on a façade with different lengths and thicknesses - (5500 m) Paris, France



 Stéphane Malka
 David Du Castel (Philéas Fotos)

MOSO® Mastering Bamboo

Endless possibilities with MOSO® Bamboo Products: MOSO® develops and creates engineered bamboo products for interior and exterior applications that meet the highest technical requirements and quality standards, enhance the beauty of applications and are made from the sustainable, renewable resource: Moso bamboo. MOSO® Products can be divided into four product groups:

MOSO® Bamboo Outdoor

By using unique production processes the material is made suitable for many exterior applications, such as decking, cladding, fencing, and furniture.



MOSO® Bamboo Flooring

A complete range of flooring types with multiple variations in size, colour and style, thus providing dozens of different bamboo flooring possibilities for each application (ranging from residential to commercial).



There is no other company worldwide with an equal – and still expanding – broad assortment in high quality bamboo products, permanently available from stock either in Barcelona (office Moso Europe), Milan (office Moso Italy), Cape Town / Johannesburg (office Moso Africa), Lansdale (office Moso USA), Dubai (office Moso Middle East), Hangzhou (office Moso China) or at the main office near Amsterdam (Moso International). Furthermore, MOSO® works with several partner companies and leading distributors worldwide to ensure the availability of MOSO® products in each region.

Furthermore, because of its expertise, MOSO® is able to develop unique, customised bamboo solutions for industrial clients meeting exceptionally stringent requirements. Through its experience, innovative attitude and world-wide network, MOSO® is recognised as the global A-brand in bamboo products. The proof is the impressive list of references and clients such as Madrid Airport, Kempegowda International Airport, BMW, AkzoNobel, Texaco, Guggenheim Museum, SNCF, Rabobank, United Nations (FAO), Iberostar and CitizenM Hotels. For an overview of our references and clients please refer to our website: www.moso-bamboo.com/references

MOSO® Bamboo Beam, Panel & Veneer

A very broad assortment in various sizes, colours and styles, offering solutions for indoor decoration (walls, ceilings, furniture, doors, etc) and (semi-) structural applications (window frames, curtain walls, etc).



MOSO® Bamboo Unlimited

Unique solutions to meet exceptionally high requirements from project partners and customised solutions for industrial clients like MOSO® Veneer for BMW car interiors, MOSO® Outdoor Beams for Erlau outdoor furniture and MOSO® Jacking Beams for Mammoet.



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