MOSO®
Bamboo X-treme®
outdoor products

WARRANTY 25 YEARS

Lior Teitler

MOSO® BAMBOO X-TREME®
certified
100%
proven
durable - stable - sustainable

bamboo: the fastest growing plant in the world

MOSO® BAMBOO X-TREME®
certified 100% proven
durable - stable - sustainable

certified

durable — Class 1 (CEN/TS 15083-2) EN350 | Class 4 EN335

fire resistant — Class A (ASTM E84) | B_{fl}-s1

sustainable — CO_2 NEUTRAL

proven

Since 2008 over **3.5 million m² installed**, in more than **60 countries**.

WARRANTY 25 YEARS

high stability: end-match system

MOSO®
Bamboo X-treme®

With Bamboo X-treme®, MOSO® has developed a truly **ecological** and **durable** alternative to increasingly scarce tropical hardwood.
MOSO® uses a unique process to enhance the **hardness**, **dimensional stability**, **fire resistance** and **durability** to a level **superior** to the best tropical hardwood species. MOSO® Bamboo X-treme® can be used for **outdoor decking, cladding, fencing** and **outdoor furniture**.

table of contents

moso® **bamboo** x-treme

Private Residence Buenos Aires
(100 m²) Buenos Aires, Argentina

from bamboo to Bamboo X-treme®

The fast growth and abundant availability makes bamboo a perfect source for many applications in and around buildings. With good reason, it's often called 'the building material of the future'. However, bamboo as a raw material cannot be used outdoors without a protective treatment. Due to its high "sugar"-components, bamboo is more susceptible to being attacked by micro-organisms and fungi. Let us explain how we get from the raw bamboo material to the final product, MOSO® Bamboo X-treme®, through a production process called Thermo-Density®.

stem to strands
After harvesting, the mature Moso bamboo stems are split in a longitudinal direction and the outer skin is removed. The strips are then crushed by using a number of incision rollers which slice gaps into the strips and then (by pressure) grind the strips to loose strands. The untreated strands have a light yellow colour.

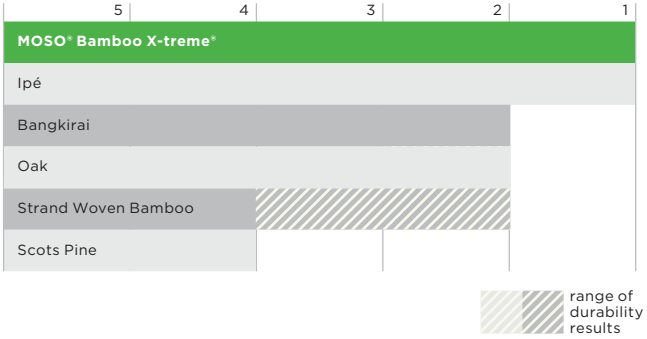
thermal treatment
In several steps, the strands are heated up to 200°C in the presence of a saturated steam (to protect the wood from charring or burning) and cooled down. During processing, the moisture content and sugar content change. Furthermore, this process changes the colour of the bamboo from white/yellow to deep/dark brown.

from strands to product
The dark bamboo strands are dipped into phenolic glue (< 10% of the weight of the bamboo). After drying, the strands are put into a mould, and are then compressed under high temperature and at a very high pressure, to cure the glue. The output is a large panel, which is cut into smaller sections (boards or beams). These are then further machined and profiled to get the required shape (for example, for decking: a ribbed surface and grooves along the sides to allow installation with fasteners). As a last step, depending on the customer's request, the boards can be pre-oiled.

Thermo-Density®
We call the combination of compressing and thermally treating strands a Thermo-Density® process. It increases the density from 650-700 kg/m³ to approx. 1.150 kg/m³ and improves the hardness 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 by approximately 50%.

Besides stability and hardness improvements, the durability is improved to the best durability class possible, from Class 5 to Class 1: Class 1 (EN 350) CEN/TS 15083-2 - simulated graveyard test and Class 1 (EN 350) CEN/TS 15083-1.

durability class according to EN 350 (CEN/TS 15083-2 / CEN/TS 15083-1)



MOSO® Bamboo X-treme® is also well protected against superficial fungi Class 0 (EN 152), and achieves the use/risk Class 4 according to EN 335.

Only MOSO® can ensure you have the original, unique Bamboo X-treme® product. Other products that attempt to copy the original, do not offer the same hardness or 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, certified MOSO® Bamboo X-treme® products!**

harvesting after 5 years

split the Moso bamboo stems, remove the outer skin and crush the strips into strands

modify the bamboo strands with a heat-treatment at 200°C

compressing the strands into Thermo-Density® material

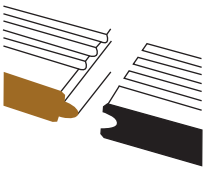
finally creating the final profile and surface

MOSO® Bamboo X-treme®: material more stable, harder and stronger than almost any other hardwood in the world!

discover the Bamboo X-treme® benefits

hard & durable

- The only bamboo decking with Class 1 durability (EN 350) tested following CEN/TS 15083-2 class (simulated graveyard test).
- Use Class 4 in accordance with EN 335.
- Class 0 fungi resistance in accordance with EN 152.
- Exceptionally hard: Brinell >9.5kg/mm^2 (harder than any tropical hardwood available).
- MOSO provides Bamboo X-treme® outdoor products* with up to 25 years warranty.



high stability

- Very stable as a result of the thermo treatment combined with High Density® compression.
- Far more stable than tropical hardwoods - enabling an end-match system.
- Limited tendency to torsion.
- No gap between the end of the boards necessary.
- Only 5-6 mm expansion space between the boards.
- Possible to use pressure treated lumber or metal for joists.

easy to install

- Can be installed using hidden fasteners or face screwed.
- Both sides of the board - reeded 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, release and replace.
- End-match system simplifies the installation by allowing the joint to float between the joists.
- Complementing Thermo-Density® sub frame joists available.

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.

beautiful appearance

- A beautiful, natural hardwood look.
- Choice for flat or reeded surface in one reversible board.
- Use of hidden fasteners avoids face screwing and plugging.
- Free of knots and natural plant resins.
- Choice for natural fading, resulting in a natural grey color or maintaining the rich brown color using an exterior finish.

endless resource

- Made from Moso bamboo; With a growing speed of up to 1 meter per day the fastest growing plant on earth.
- Ready for harvest after 5 years (compared to up to 100 years for hardwood species) - no deforestation.
- Consisting of approx. 90% natural bamboo.

CO_2 neutral

- Official LCA and carbon footprint studies by Technical University Delft according to ISO 14040/44 confirm that MOSO® Bamboo X-treme® is CO_2 neutral over the full life cycle.
- No use of fungicide in the production.

fire resistant

- Reaches fire resistance Class Bfl-s1 (decking) and B-s1-d0 (cladding, fencing, beams) following EN 13501-1 without use of fire retardants. As a result, MOSO® Bamboo X-treme® can be easily applied in public projects without additional protective measures.
- Reaches flame spread index Class A following ASTM E84.

*) Bamboo X-treme® Decking, Cladding, Fencing, Sub frame joist and End-profile.

Haladesign Landschaftsplanung Qin (Andy Andresen)

Wellness Residence Alpenrose
(150 m²) Maurach am Achensee, Austria

Ricardo Bofill MOSO®

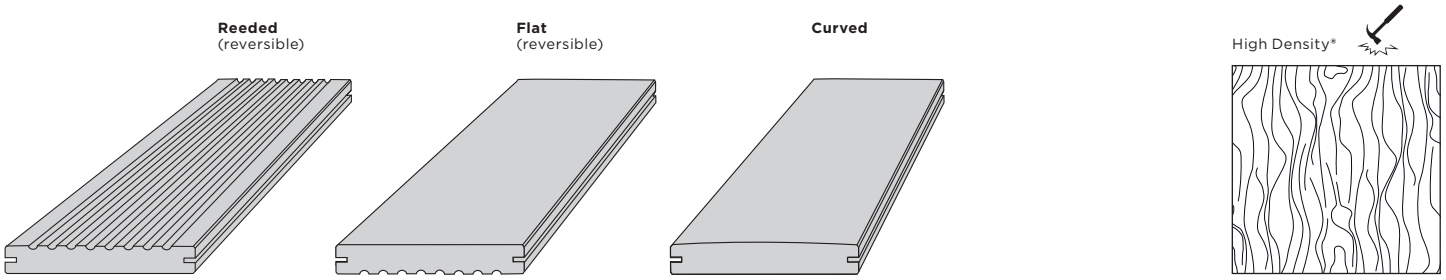
Hotel W Barcelona
(1300 m²) Barcelona, Spain

Studio Metrocubo

Hotel Villa Elena
(80 m²) Parenzo, Croatia

MOSO® Bamboo X-treme® Outdoor Decking

MOSO® Bamboo X-treme® Decking is a solid, Thermo-Density® board, made from compressed bamboo strips. A special, unique heat-treatment process at 200°C provides MOSO® Bamboo X-treme® the highest durability class possible in the appropriate EU norms (see technical characteristics below) and increases the hardness and stability. A unique feature of MOSO® Bamboo X-treme® is the end-match system: this can only be done with very stable materials and enables connection of an unlimited number of boards in the length. The special symmetrical shape of the sides offers the possibility to choose between either the reeded or the flat surface, and allows for quick installation with MOSO® fasteners. Like any untreated tropical hardwood species, when exposed to outdoor conditions, MOSO® Bamboo X-treme® will turn grey over time creating a very natural look.



B: Bevel (also on ends), **O**: Oil Woca (the end of the boards are protected with wax). *) Check availability.

Product Code	Surface	Finish	Grooved	End-matched	Edges	Dimensions (mm)
BO-DTHT170G*	Reeded/Flat	-	Yes	Yes	B	1850x137x20
BO-DTHT171G	Reeded/Flat	O	Yes	Yes	B	1850x137x20
BO-DTHT181G	Reeded/Flat	O	Yes	Yes	B	1850x137x18
BO-DTHT190G*	Reeded/Flat	-	Yes	Yes	B	1850x155x20
BO-DTHT191G	Reeded/Flat	O	Yes	Yes	B	1850x155x20
BO-DTHT191G-C	Curved	O	Yes	Yes	B	1850x155x20
BO-DTHT210G*	Reeded/Flat	-	Yes	Yes	B	1850x178x20
BO-DTHT211G	Reeded/Flat	O	Yes	Yes	B	1850x178x20

installation summary

(full version available on www.moso-bamboo.com/x-treme)

- Install a suitable, fixed, stable and durable sub frame.
- Determine which side of the board will be used: the reeded or flat side.
- Fix the boards on the sub frame using fasteners (to be inserted in the grooves of the board) or alternatively with screws (through the surface).
- Use a 1-2% slope and ensure good ventilation is available.
- After installation: make sure proper cleaning and maintenance is done, according to the chosen finish.
- When not applying outdoor oil regularly, the deck will acquire a grey colour tone and the typical bamboo wood grain structure will become less visible.
- Bamboo X-treme® is available pre-oiled or unfinished. In order to maintain the rich brown colour an exterior penetrating oil for hardwoods is recommended to be applied 3 to 4 months after installation. We advise to apply the initial coat 3-4 months after installation.
- For further info: please see the installation/maintenance instructions.

technical characteristics and certifications

- Density: +/- 1150 kg/m³
- Dimensional stability: length: + 0.1 %; width + 0.9% (24 hours in water 20°C)
- Resistance to Indentation - Brinell Hardness: ≥ 9.5 kg/mm² (EN 1534)
- Reaction to fire: Class Bfl-s1 (EN 13501-1)
- Flame spread index: Class A (ASTM E84)
- Slip resistance: USRV 55 (Dry), USRV 29 (Wet) (CEN/TS 15676) / R 10 (CEN/TS 16165 Annex B - DIN 51130) (Dry)
- Thermal emittance: 0.81 (ASTM C1371) [1)]
- Solar Reflectance (SR): 0.32 (ASTM C1549) [1)]
- Solar Reflectance Index (SRI): Low 27, Medium 30, High 33 (ASTM E1980) [1)]
- Modulus of Elasticity: 13565 N/mm² (mean value - EN 408)
- Breaking strength: 54.4 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)
- Effectiveness against Blue Stain: Class 0 (EN 152)
- Use Class: Class 4 (EN 335)
- CO_2 neutral: LCA report TU Delft (ISO 14040/44) (www.moso.eu/lca)
- Environmental Product Declaration - EPD (EN 15804) (www.moso.eu/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 X-treme®.

Class A | Bfl-s1 | E1 HCHO | EPD EN15804

Class 1 (CEN/TS 15083-2) EN350 | Class 4 EN335 | CO_2 NEUTRAL | 25 YEARS WARRANTY

FSC www.fsc.org The mark of responsible forestry FSC® C002063

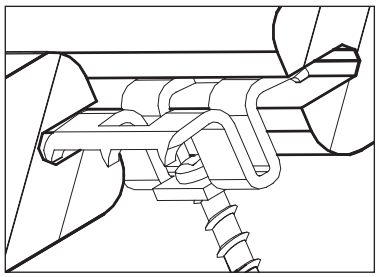
LEED | breeam

MOSO® Bamboo X-treme® Outdoor Decking
accessories

MOSO® fasteners and screws

With these fasteners MOSO® Bamboo X-treme® Decking and Cladding 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-SCREW-BX08	Fastener Asymmetric (20 mm)	Stainless steel A2 (AISI304)	Brown	27x22.5x10.8	4.5x30
CLIP-SCREW-BX031	Fastener (20 mm)	Stainless steel A2 (AISI304)	Brown	27x22.5x10.8	4.5x30
CLIP-SCREW-BX301	Fastener starter/end (20 mm)	Stainless steel A2 (AISI304)	Brown	27x17x31	4.5x30
CLIP-SCREW-BX09	Fastener Asymmetric (18 mm)	Stainless steel A2 (AISI304)	Brown	27x22.5x9.8	4.5x30
CLIP-SCREW-BX041	Fastener (18 mm)	Stainless steel A2 (AISI304)	Brown	27x22.5x9.8	4.5x30
SCREW-03-01	Screw for aluminum sub frame joist	Stainless steel A2 (AISI410)	Brown		4.2x16



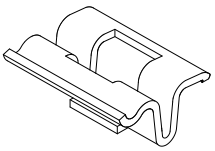
recommended number of fasteners/m²

decking*	cladding**
137 mm ~20 pcs/m²	137 mm ~14 pcs/m²
155 mm ~17 pcs/m²	75 mm ~26 pcs/m²
178 mm ~14 pcs/m²	

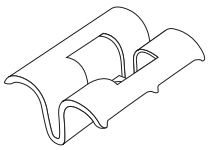
*) Based on distance of 462.5 mm between the sub frame joist axes.

**) Based on distance of 600 mm between the sub frame joist axes.

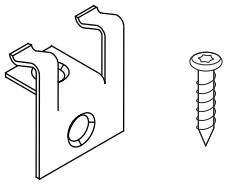
CLIP-SCREW-BX08 / BX09



CLIP-SCREW-BX031 / BX041



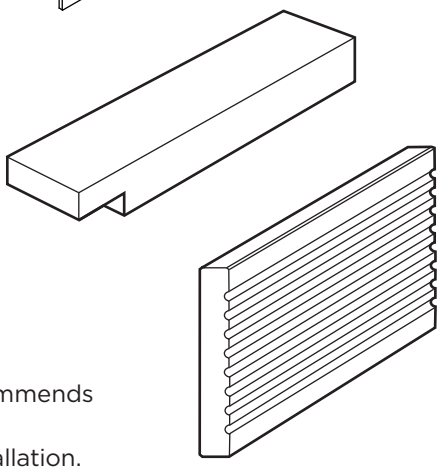
CLIP-SCREW-BX301



sub frame joists

The MOSO® Bamboo X-treme® sub frame joists are made of the same material as the decking boards: Thermo-Density® heat-treated bamboo.

Product Code	Material	Finish	Dimensions (mm)
BO-SB150	Thermo-Density® bamboo	Unfinished	2440x70x40
BO-SB155	Thermo-Density® bamboo	Unfinished	2440x60x40



endprofile

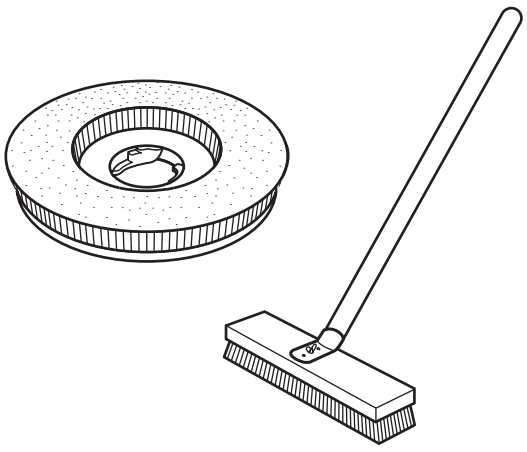
The BO-DTHT162 is an endprofile for an elegant finish of the sides of the decking. It is placed vertically against the sides of the terrace to cover the sub frame.

Product Code	Material	Finish	Dimensions (mm)
BO-DTHT162	Thermo-Density® bamboo	Unfinished	1850x137x20

maintenance & cleaning

Under the influence of wind, rain, sun and snow the decking will weather. MOSO® recommends to impregnate and maintain the pre-oiled decking with Woca Maintenance materials. Unfinished decking must be treated with Sikkens Saturator or Woca oil right after installation. The silicium carbid broom and machine disk are perfectly suited to clean and smooth the decking surface of Bamboo X-treme® and to remove splinters due to the capability to sand the surface in addition to cleaning it.

Product Code	Material
Wax-bx-01	Wax for board ends X-treme
Oil-Woca-003	WOCA Maintenance Oil Natural
Oil-Woca-011	WOCA Exterior Oil Exclusive Teak
Cleaner-Woca-01	WOCA Exterior Cleaner
SATURATOR-SIK01	SIKKENS Cetol Ipe
SATURATOR-SIK11	SIKKENS Cetol Transparent
Broom-01	Silicium carbid broom
Disk-01	16” Silicium carbid disk
Woca-Applicator	Exterior oil applicator stem, pad holder and pad



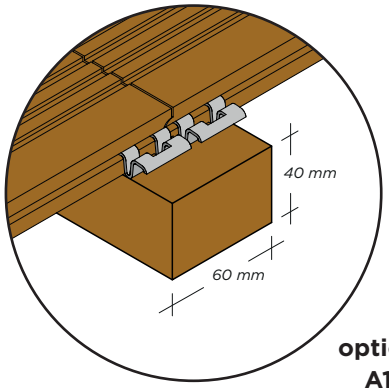
MOSO® Bamboo X-treme® Outdoor Decking
installation instruction

before installation

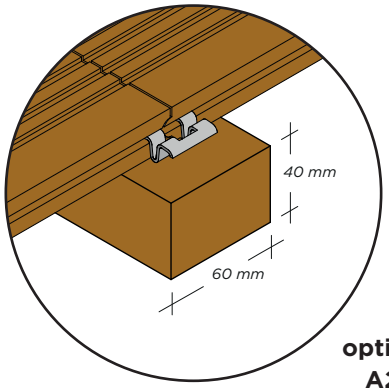
- Water logging under the decking must be avoided by preparing a water permeable ground structure. This can be achieved by sand layers and gravel dispersion above.
- Use cement/stone tiles 40-50 mm thick or pedestals, to support the sub frame (see drawing).
- Place a rootbarrier under the tiles to prevent weeds growing under the decking.
- Install the decking boards with a slope of 1-2% to enable water to run off the surface. Alternatively, the decking can be installed without a slope, but due to the fact that water stays longer on the surface, it is possible to have more superficial cracks. If the installation is done without slope more cleaning will be required.
- The decking with the curved surface BO-DTHT191G-C is developed to be installed without slope. Thanks to the curved surface, a fast drainage from the boards is guaranteed.
- Ensure good ventilation of the decking by keeping at least 20 mm space at walls and obstacles and avoid closing the terrace on the sides.
- When the surface underneath the decking is not fast drying, there should be at least 100 mm distance between the decking and the surface underneath the floor.
- Use sub frame joists with the minimum size of 40x60 mm. Suitable joists are those with the same durability class as the decking; MOSO® sub frame joists, ALU sub frame joists, stable hardwood joists or impregnated pine joists. Avoid direct contact with the earth.
- 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 with 5-8 mm distance between the end of the joists.
- 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 battens. Always install the head sides of the boards exactly on the sub beam. 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 joist (centre-to-centre) are no more than 300 mm apart.
- Always install cut off outdoor boards on at least 3 sub frame joists.

please note

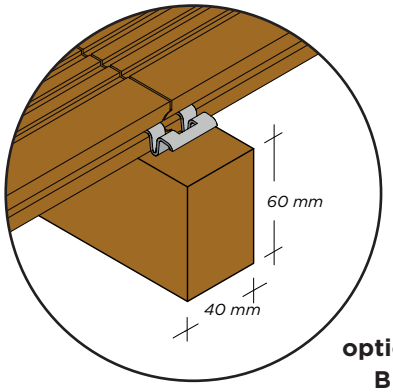
- The MOSO® Bamboo X-treme® outdoor board is a natural forest product, which varies in colour, grain and appearance. Colour can change fast from dark brown to brown or grey, depending on the maintenance schedule.
- Cracks and splinters on the surface and on the end of the boards will arise from the different drying characteristics of the surface and cross cut ends. Besides this the surface gets rough. This phenomenon is normal for most wood species and is minimized for this product by its unique 'Thermo-Density®' production method. Head sides cracks can be further minimized by applying wax on cross end sides of the cut boards, see 'the installation'.
- Splinters and roughness can be removed by cleaning the surface of the decking with the silicium carbid broom or machine disk MOSO® supplies, the surface will become smooth and splinters are removed.
- Dimensional change or cupping of the boards can occur after installation. This phenomenon is normal for most wood species and is minimized for this product by its unique Thermo-Density® heat-treated process.
- When using the flat side of the boards as surface please note that deformation under influence of climate will be significantly more visible. Deformation of the surface is not considered to be fault of the material.



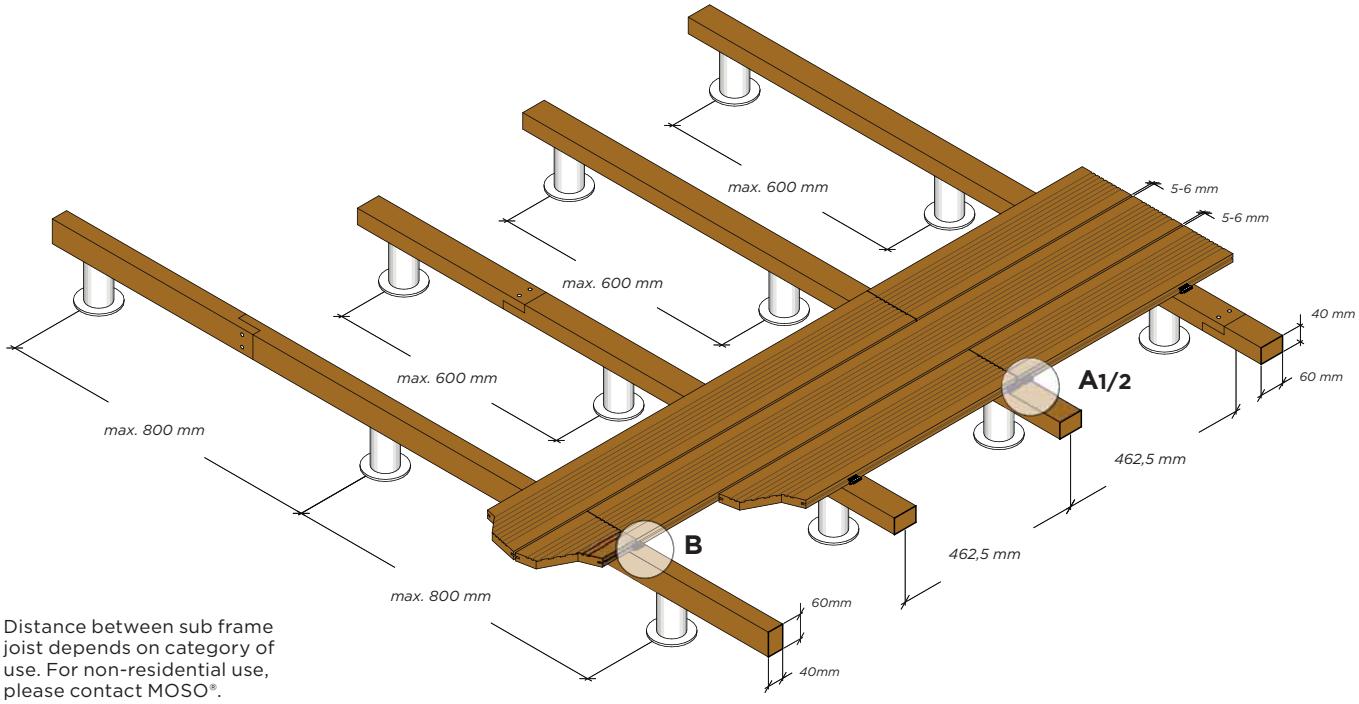
option A1



option A2



option B



Distance between sub frame joist depends on category of use. For non-residential use, please contact MOSO®.

MOSO® Bamboo X-treme® Outdoor Decking
installation instruction

the installation

- Keep at least 5-6 mm expansion space between the boards (in width direction). With MOSO® Bamboo X-treme® fastener installation this is automatically the case.
- Because of the stability of the boards and the end-match system no expansion space is needed on the end of the boards.
- Every cut end has to be impregnated with board end wax, to prevent water penetration. Board end wax is available as accessory.
- We advise to oil the decking shortly after installation but no later than after the first winter.

installation with fasteners

- Determine the surface side of the boards (reeded- or flat surface).

- **Use the MOSO® Bamboo X-treme® asymmetric fasteners in the following sequence:**
  - Press fastener with hooked side in the groove of one board.
  - Pre-drill the screw holes. On hardwood/ bamboo: use 3.2-3.5 mm extended drill (11 cm long) in order to pre drill deep enough.
  - Mount the screw fully tightening. Always screw vertically to the joist. Apply low torque with slow screwing speed on the drilling machine. Perform some tests for correct torque speed adjustment before full installation.
  - Install the following board by sliding under the waved side of the fasteners.

- **Use the MOSO® Bamboo X-treme® fasteners in the following sequence:**
  - Press fastener in the groove of one board.
  - Pre-drill the screw holes. On hardwood/ bamboo: use 3.2-3.5 mm extended drill (11 cm long) in order to pre drill deep enough.
  - Mount the screw without fully tightening.
  - Install the following board.
  - Tighten the screw in the fastener and the sub beam. Always screw vertically to the joist. Apply low torque with slow screwing speed on the drilling machine. Perform some tests for correct torque speed adjustment before full installation.

- Use approx. 20/17/14 fasteners per m^2, this is depending on the type or board 137/155/ 178 mm wide. When the tongue and groove are connected on the sub beam, use 1, preferably 2 fasteners, 1 for every board (see drawing options A1 / A2 / B).
- Only use the included stainless steel decking screws (4.5 x 30 mm).
- Please watch the installation video **www.moso-bamboo.com/x-treme**.

screw down installation

- Determine the surface side of the boards (reeded- 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 to avoid cracking of the decking.
- Always screw both sides (left and right) of the board.
- Use stainless steel decking screws (ca 5 x 50 mm).

maintenance and cleaning

prefinished version

MOSO® Bamboo X-treme® outdoor decking is pre-oiled, double sided, with WOCA exterior waterbased decking oil (teak colour).

- Clean the floor at least one time per year with WOCA Decking Cleaner and silicium carbid broom or -disk. Follow the instructions on **www.moso-bamboo.com/youtube**. Depending on climate and use it may be necessary to perform cleaning more than once per year.
- Remove the dirt water residue on the boards with clean water and let the floor dry.
- Apply 1-2 new layers of WOCA Decking Oil (WOCA exterior oil, teak colour). When not applying new outdoor oil 1-2x per year, the floor will turn in to a grey colour tone and the typical bamboo wood grain structure will become less visible. First oiling can be performed directly after installation, the best moment for the first maintenance is 3-4 months after installation, when the surface is more open than immediately after installation. Follow the instructions on **www.moso-bamboo.com/x-treme**.
- It is advisable to keep the decking free from dust and dirt as much as possible (clean by broom regularly).

unfinished version

It is possible to leave the decking without oiling, however cleaning once a year is necessary; the result will be a rough and grey appearance. An initial application of waterbased decking oil / saturator is necessary in order to impregnate the decking. This can be done immediately after installation or, to have better impregnation, after 3-4 months when the surface is more open.

- Clean the decking with water, cleaner and silicium carbid broom or - disk.
- Let the decking dry. When the decking is completely dry please follow the instructions of the supplier of the used oil or saturator.
- After this first application the decking can remain without oil treatment for natural greying. However annual cleaning with the silicium carbid broom or disk is obligatory. If you want to keep a darker colour, regular application of oil/saturator is needed.
- It is advisable to keep the decking free from dust and dirt as much as possible (clean by broom regularly).

storing

Store MOSO® Bamboo X-treme® in a dry, cool place protected against dust and direct sunlight.

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.

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

MOSO® Bamboo X-treme® Outdoor Decking
maintenance & cleaning

Surface of MOSO® Bamboo X-treme® with different maintenance and cleaning scenarios: weathered, dirty decking (left), weathered, cleaned decking (middle), and re- oiled decking (right).

maintenance WOCA
The surface of decking is weathered under influence of wind, rain, frost and sunshine (UV). As a result, the surface turns grey, dirty and cracks/ splinters will appear. WoodCare Denmark has developed different outdoor cleaning- and maintenance products. WOCA Exterior Cleaner loosens dirt and removes green growth from the surface, without damaging it.

cleaning
- Soak MOSO® Bamboo X-treme® with plenty of water. If possible use a garden hose. Do not use high-pressure cleaners.
- Mix exterior cleaner with water in the ratio 1:2 and apply it. If the decking is extremely dirty, exterior cleaner may be used undiluted. Clean the decking with a silicium carbid brush or machine disk (see accessories). Scrub the soaked material lengthwise following the bamboo grain until the material appears clean. If the decking has a flat surface, 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. Clean the surface carefully with water.
- Leave MOSO® Bamboo X-treme® to dry for approx. 24 hours. The material must be completely dry before oil treatment can be done.

application of oil
- Apply in dry weather only. Avoid direct sunlight and high temperatures.
- Stir the oil thoroughly before use. Apply an even thin coat of oil with a brush.
- The oil is cream-coloured when it is wet.
- After a few minutes, the material has an oily appearance as the water is evaporating.
- Wipe off any excess oil with clean cotton cloths after no more than 5-10 minutes.
- Take particular care to remove excess oil from joints and grooves.
- Repeat the above process.
- When the material is dry, it may be polished with a polishing pad or polishing machine to ensure an extra hard-wearing surface. It takes 24 to 48 hours for the oil to harden thoroughly, depending on weather conditions and outdoor temperature. The material should not be exposed to water during this period.

maintenance of flat side
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 reeded surface. If regular maintenance with a waterbased decking oil 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.

Check out the maintenance movie at www.moso-bamboo.com/x-treme

Wouter Bink Peter Brugmans Fotografie

Garden house
(40 m²) the Netherlands

Studio Osiris Hertman Jurrit van der Waal

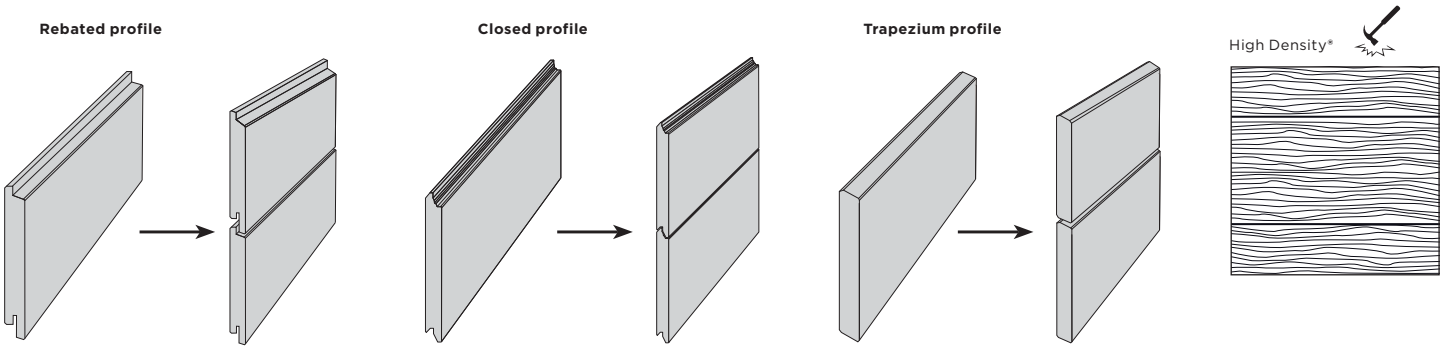
Villa by Studio Osiris Hertman
(150 m²) The Netherlands

André Clemetsen

Private Residence Kjeller
Kjeller, Norway

MOSO® Bamboo X-treme® Outdoor Cladding

MOSO® Bamboo X-treme® Cladding is a solid, Thermo-Density® exterior board, made from compressed bamboo strips. A special, unique heat-treatment process at 200°C provides MOSO® Bamboo X-treme® the highest durability class possible in the appropriate EU norms, increases the stability and density, and consequently the hardness. Furthermore, contrary to other wood products, this material achieves fire resistance Class B-s1-d0 (EN 13501-1) without impregnation with expensive and eco-damaging fire retardants. Bamboo X-treme® Cladding is available in 3 shapes: a rebated profile for installation with fasteners (18 mm) and screws, closed profile for 'invisible' screw installation and the trapezium profile for installation with screws. Like any untreated tropical hardwood species, when exposed to outdoor conditions, MOSO® Bamboo X-treme® will turn grey over time creating a very natural look.



B: Bevel (also on ends), **F**: Flat.

Product Code	Shape	Finish	Edges	Surface	End-matched	Effective width (mm)*	Dimensions (mm)
BO-DTHT500G	Rebated profile	-	B	F	Yes	125	1850x137x18
BO-DTHT510	Trapezium profile	-	B	F	Yes	132	1850x137x18
BO-DTHT530	Closed profile	-	B	F	Yes	124.5	1850x137x18
BO-DTHT505G	Rebated profile	-	B	F	Yes	63	1850x75x18
BO-DTHT515	Trapezium profile	-	B	F	Yes	70	1850x75x18
BO-DTHT525	Trapezium profile	-	B	F	No	70	1850x75x12

* Effective width without distance between the boards, recommended distance 6 mm.

installation

- Full version available on www.moso-bamboo.com/x-treme.
- MOSO warrantees the bamboo material and the mounting materials (fastener/screw) it supplies but does not warrantee the connection with other materials (such as sub frame joist/battens). It is the responsibility of the installer to make sure the used screw matches such materials during the full lifetime of the product.

technical characteristics and certifications

- Density: +/- 1150 kg/m³
- Dimensional stability: length: + 0.1 %; width: + 0.9% (24 hours in water 20°C)
- Resistance to Indentation - Brinell Hardness: ≥ 9.5 kg/mm² (EN 1534)
- Reaction to fire: Class B-s1-d0 (EN 13501-1) [1]
- Flame spread index: Class A (ASTM E84)
- Thermal emittance: 0.81 (ASTM C1371) [2]
- Solar Reflectance (SR): 0.32 (ASTM C1549) [2]
- Solar Reflectance Index (SRI): Low 27, Medium 30, High 33 (ASTM E1980) [2]
- Modulus of Elasticity: 13565 N/mm² (mean value - EN 408)
- Breaking strength: 54.4 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)
- Effectiveness against Blue Stain: Class 0 (EN 152)
- Use Class: Class 4 (EN 335)
- CO_2 neutral: LCA report TU Delft (ISO 14040/44) (www.moso.eu/lca)
- Environmental Product Declaration - EPD (EN 15804) (www.moso.eu/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 X-treme®.

Class A | B-s1-d0 | E1 HCHO | EPD EN15804
Class 1 (CEN/TS 15083-2) EN350 | Class 4 EN335 | CO_2 NEUTRAL | 25 YEARS WARRANTY
FSC www.fsc.org — The mark of responsible forestry FSC® C002063
LEED USGBC — breeam

MOSO® Bamboo X-treme® Outdoor Cladding
installation instruction

important

- The MOSO® Bamboo X-treme® outdoor cladding board is a natural product, and some variation in colour, grain and appearance is normal. Colour can change fast from dark brown to brown or grey, depending on the climatic conditions and maintenance schedule.
- Small cracks and splinters on the surface and on the end 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 minimized for this product by its unique 'Thermo-Density®' production method. Cracks can be further minimized by applying wax on the ends of the boards.
- Slight dimensional change or cupping of the boards can occur after installation. This phenomenon is normal for most wood species and is minimized for this product by its unique 'Thermo-Density®' production method.
- Keep at least 5-6 mm ventilation space between the boards (in vertical direction) except for the new closed cladding profile (BO-DTHT530). Installation with MOSO® Bamboo X-treme® fasteners ensures correct spacing automatically.
- Because of the stability of the boards and the shape of the end-match system no expansion space is needed on the length (the end of the boards).
- We recommend applying end sealer wax on every (cut) end to prevent water penetration. End sealer wax is available as an accessory.
- If a random joint pattern is desired, the distance between the battens can be maximum 300 mm (see drawing random pattern).

maintenance

It is possible to leave the cladding without maintenance; the result will be a rough and grey appearance. If you want to keep a darker colour, regular application of oil/saturator is needed:
- Clean the cladding with water.
- Let the cladding dry. When the cladding is completely dry apply the oil or saturator according to the supplier's instructions.

storing

Store MOSO® Bamboo X-treme® in a dry, cool place protected against dust and direct sunlight.

the installation

rebated profile

- Apply a waterproof membrane against the wall and screw vertical battens (at least 20 mm thick, 60 mm wide) onto that, creating a rigid/flat surface onto which the boards can be fixed.
- Each board should be fixed on at least 3 battens: so the maximum centre-to-centre distance between the battens is 616.7 mm (1850 mm/3).
- The cladding boards should be fixed using the MOSO® Asymmetric fasteners (18 mm). Make sure the MOSO® Fastener is screwed in the middle of the batten so that it is fully supported.
- Please note: At the edges of the cladding, keep a distance of 5-10 mm from adjacent materials, to allow for sufficient ventilation.

- **STEP 1 levelling first row of fasteners**
  - Start with the lowest row of fasteners (asymmetric fastener with waved side up) and make sure they are placed fully level (using a spirit level).
  - Avoid overtightening the screws as this can pull the fastener slightly into the wood, making it difficult to place the board onto the fastener.

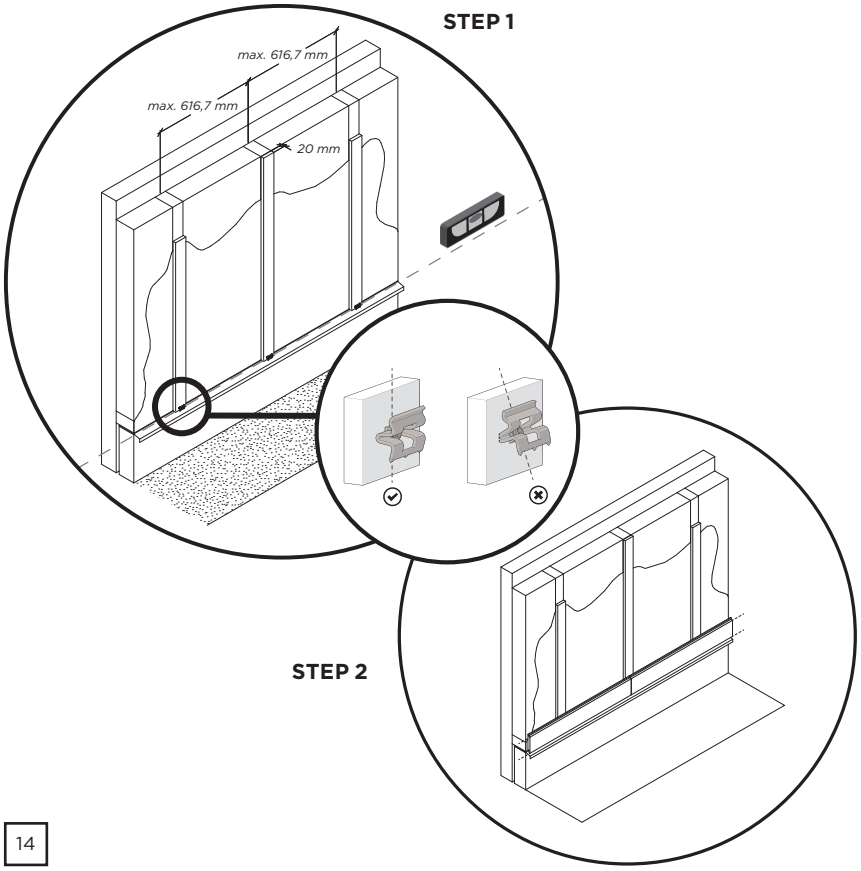
- **STEP 2 install first row of boards**
  - Place the board onto the row of fasteners. The waved side of the fastener enables an easy grip into the groove of the board.
  - Make sure that the fasteners engage deeply enough in the groove so that the boards lay level. Tapping the boards should be done carefully, preferably with a rubber mallet.
  - We advise always fixing the end (end joints) of the boards on a batten/beam, using 2 fasteners.

- **STEP 3 second row of fasteners**
  - Install the second row of fasteners (asymmetric fastener with the waved side up), pushing them down on the tongue of the first row of boards.

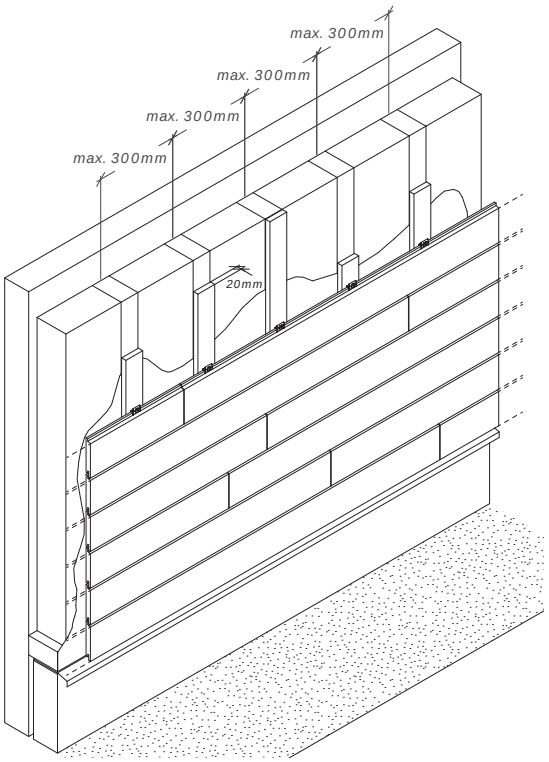
- **STEP 4 install second row of boards**

- **STEP 5 Continue with the rest**
  - Continue to install the cladding boards in this way to cover the full surface. Make sure you keep the fasteners level and make sure enough ventilation space (5-10 mm) is kept on the edge.

rebated profile



random pattern



MOSO® Bamboo X-treme® Outdoor Cladding
installation instruction

trapezium profile

- Apply a waterproof membrane against the wall and screw vertical battens (at least 20 mm thick, 60 mm wide) onto that, creating a rigid/flat surface onto which the boards can be fixed.
- Each board should be fixed on at least 3 battens: so the maximum centre-to-centre distance between the battens is 616.7 mm (1850 mm/3).
- Fix the cladding boards using countersunk screws. Use a screw which performs in the material of the batten.
- Please note: At the edges of the cladding, keep a distance of 5-10 mm from adjacent materials, to allow for sufficient ventilation.

- **STEP 1 Install first row**
  - Start with the lowest row of boards and make sure they are placed fully level (using a spirit level).
  - Take care about the positioning of screws, try to align them and thereby obtain an equal distribution. Always use 2 screws at each fixing point. Please see the detailed drawing below, which indicates the positioning of screws.
  - Make use of a countersink drill to ensure the same sinking depth for every screw.

- **STEP 2 Install second row**
  - Install the second row of boards, using a minimum 6 mm spacer.
  - Please regularly check that the boards are still level.

- **STEP 3 Continue with the rest**
  - Continue to install the cladding boards in this way to cover the full surface. Make sure you keep the boards level and make sure enough ventilation space (5-10 mm) is kept on the edge.

Closed profile installation instruction is available at www.moso-bamboo.com/en/closed

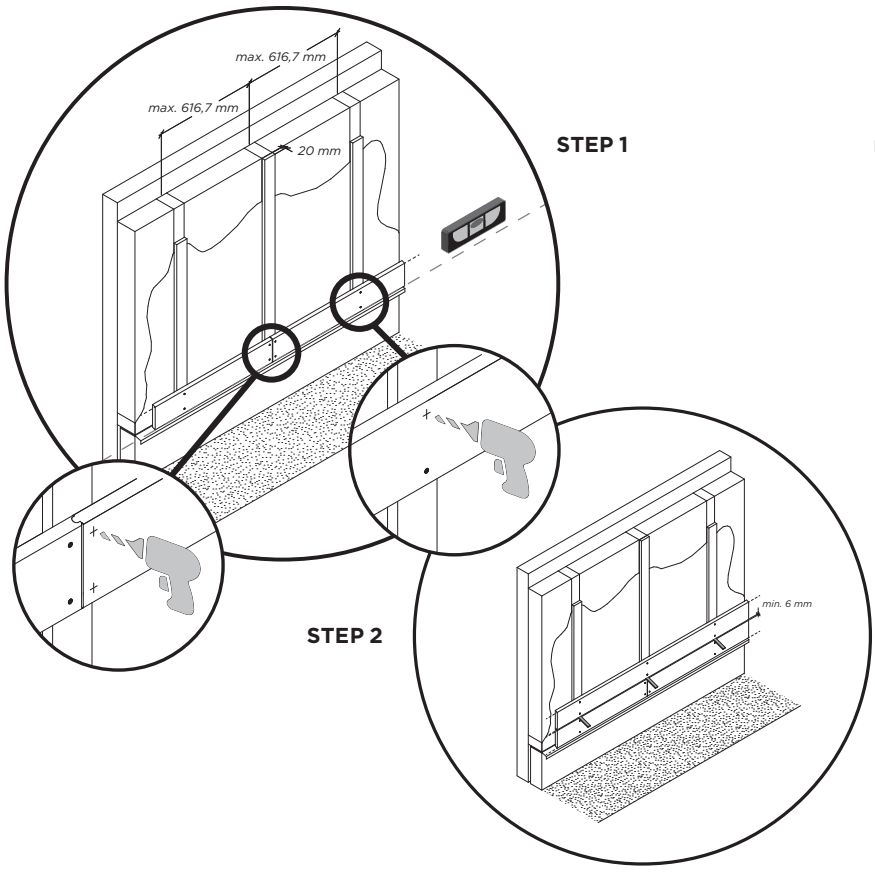
additional note

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

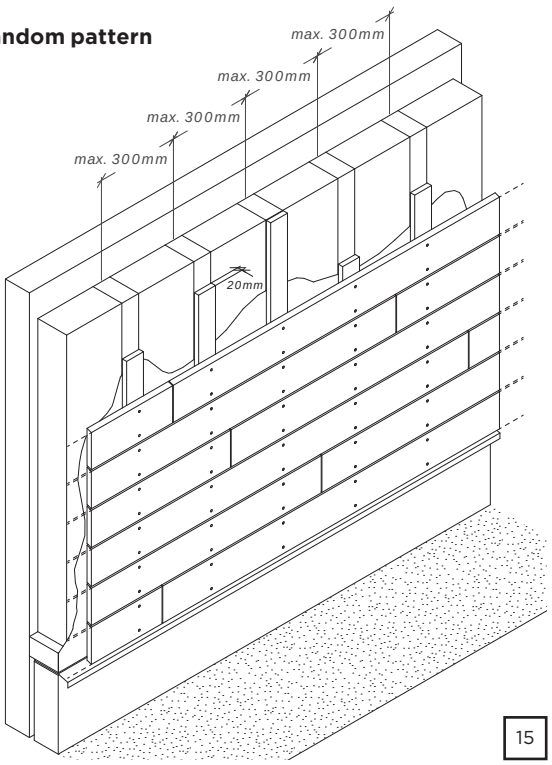
MOSO warrantees the bamboo material and the mounting materials (fastener/screw) it supplies but does not warrantee the connection with other materials (such as sub frame joist/ battens). It is the responsibility of the installer to make sure the used screw matches such materials during the full lifetime of the product.

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

trapezium profile

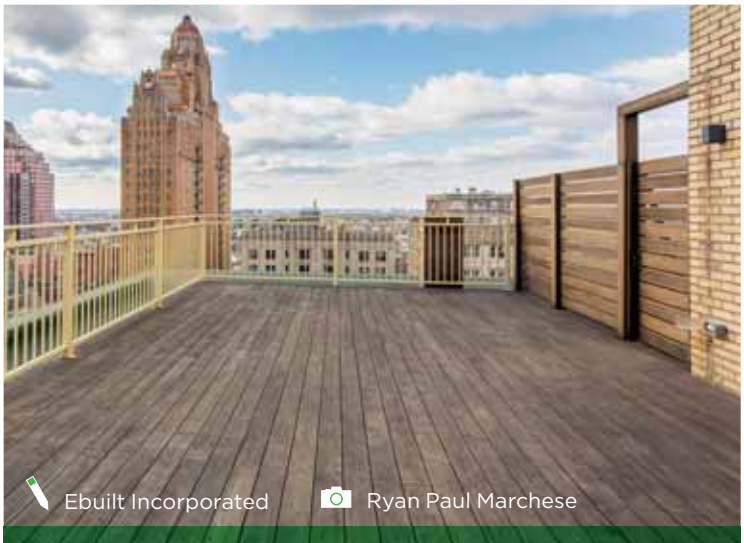


random pattern



MOSO Office
(35 m²) Barcelona, Spain

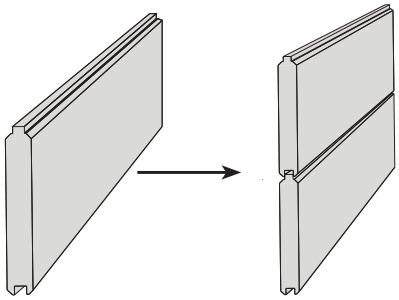
Private Residence Paços de Ferreira
(14 m²) Paços de Ferreira, Portugal

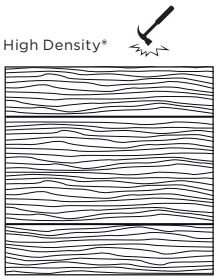


The Versailles Apartment Complex
(418 m²) Philadelphia, United States of America

MOSO® Bamboo X-treme® Fencing

MOSO® Bamboo X-treme® fence boards are solid, Thermo-Density® exterior boards, made from compressed bamboo strips. A special, unique heat-treatment process at 200°C provides MOSO® Bamboo X-treme® the highest durability class possible in the appropriate EU norms and increases the stability and density. The fence boards, equipped with a tongue/groove connection, are mounted between posts with U-profiles (not provided by MOSO®). Like any untreated tropical hardwood species, when exposed to outdoor conditions, MOSO® Bamboo X-treme® will turn grey over time creating a very natural look.





O: Oil Woca, **B**: Bevel (also on ends), **F**: Flat

Product Code	Grooved	Finish	Edges	Surface	End-matched	Effective width (mm)	Dimensions (mm)
BO-DTHT301TG	Tongue/Groove	O	B	F	No	131	1800x137x20

technical characteristics and certifications

- Density: +/- 1150 kg/m³
- Dimensional stability:
  length: + 0,1 %; width + 0,9% (24 hours in water 20°C)
- Resistance to Indentation - Brinell Hardness: ≥ 9.5 kg/mm² (EN 1534)
- Reaction to fire: Class B-s1-d0 [1] (EN 13501-1)
- Flame spread index: Class A (ASTM E84)
- Thermal emittance: 0.81 (ASTM C1371) [2]
- Solar Reflectance (SR): 0.32 (ASTM C1549) [2]
- Solar Reflectance Index (SRI): Low 27, Medium 30, High 33 (ASTM E1980) [2]
- Modulus of Elasticity: 13565 N/mm² (mean value - EN 408)
- Breaking strength: 54.4 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)
- Effectiveness against Blue Stain: Class 0 (EN 152)
- Use Class: Class 4 (EN 335)
- CO_2 neutral: LCA report TU Delft (ISO 14040/44) (www.moso.eu/lca)
- Environmental Product Declaration - EPD (EN 15804) (www.moso.eu/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

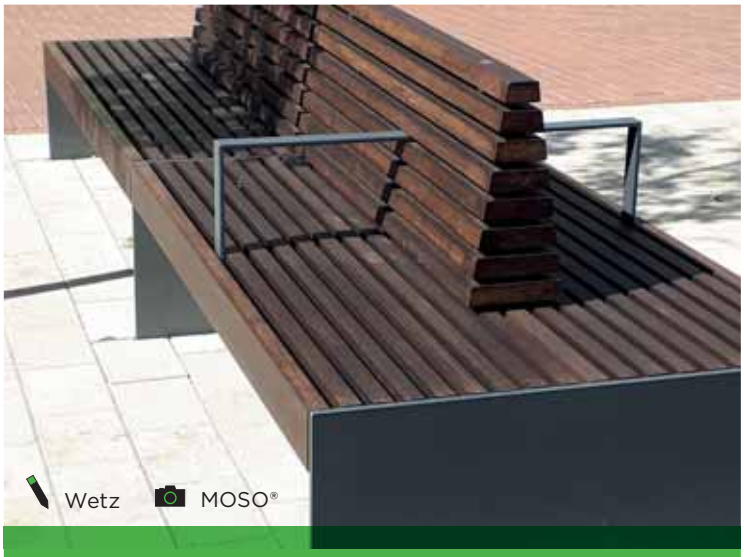
[1] Tested on 18 mm thickness, without gaps between boards, with ventilation space behind boards.
[2] Tested on 3 years weathered MOSO® Bamboo X-treme®.

Class A · B-s1-d0 · E1 HCHO · EPD EN15804
Class 1 (CEN/TS 15083-2) EN350 · Class 4 EN335 · CO_2 NEUTRAL · 25 YEARS WARRANTY

FSC www.fsc.org — The mark of responsible forestry FSC® C002063

breeam

Oxygen event complex
(5500 m) La Défense Paris, France

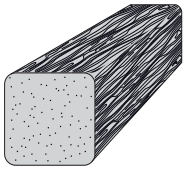


Renovation City Centre Leverkusen
(800 m) Leverkusen, Germany

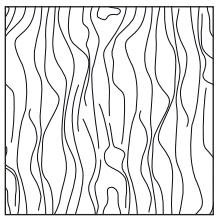
San José de la Sierra building
(14000 m) Santiago de Chile, Chile

MOSO® Bamboo X-treme® Outdoor Beams

An unique heat-treatment process at 200°C and increased density (by compressing the bamboo strips) make the MOSO® Bamboo X-treme® material extremely durable and stable. This durability and stability, and the pre-profiled rounded edges, make MOSO® Bamboo X-treme® Beams ideal for use in outdoor furniture products. The elaborate manufacturing process provides MOSO® Bamboo X-treme® Outdoor Beams the highest durability class possible in the applicable EU norms. As with tropical hardwoods, the colour of the material changes under the influence of wind, rain, frost and sunshine (UV-light). This results in a typical weathered natural grey-tone. Regular cleaning and maintenance with a Lasur/oil protects the material against this weather related discolouration.



High Density®



Product Code	Finish	Bevel (also on ends)	Dimensions (mm)
BO-DTHT2170-2-01	Sikkens Cetol	R = 4 mm	2000x115x40
BO-DTHT2171-2-01	Sikkens Cetol	R = 4 mm	2000x80x40
BO-DTHT2172-2-01	Sikkens Cetol	R = 4 mm	2000x60x40
BO-DTHT2173-2-01	Sikkens Cetol	R = 4 mm	2000x40x40
BO-DTHT2174-2-01	Sikkens Cetol	R = 4 mm	2000x55x40
BO-DTHT2175-2-01	Sikkens Cetol	R = 4 mm	2000x90x40

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

installation summary

(full version available on www.moso-bamboo.com/x-treme)

- To allow natural shrink- and swell behaviour, install beams with a minimum of 4 mm distance.
- MOSO® Bamboo X-treme® beams must be mechanically fixed, using screws/bolts. The fixation instruction depends on the application.
- Use stainless steel A2 screws/bolts.
- For all our standard size beams, except 40x40 mm, we advise a minimum of 2 screws per fixation point. 40x40 mm beams can be fixed with 1 screw per fixation 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:
  - Head sides 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, head sides must be treated with a head side sealer.

technical characteristics and certifications

- Density: +/- 1150 kg/m³
- Dimensional stability:
  length: + 0,1 %; width + 0,9% (24 hours in water 20°C)
- Resistance to Indentation - Brinell Hardness: ≥ 9.5 kg/mm² (EN 1534)
- Reaction to fire: Class B-s1-d0 [1] (EN 13501-1)
- Flame spread index: Class A (ASTM E84)
- Thermal emittance: 0.81 (ASTM C1371) [2]
- Solar Reflectance (SR): 0.32 (ASTM C1549) [2]
- Solar Reflectance Index (SRI): Low 27, Medium 30, High 33 (ASTM E1980) [2]
- Modulus of Elasticity: 13565 N/mm² (mean value - EN 408)
- Breaking strength: 54.4 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)
- Effectiveness against Blue Stain: Class 0 (EN 152)
- Use Class: Class 4 (EN 335)
- CO_2 neutral: LCA report TU Delft (ISO 14040/44) (www.moso.eu/lca)
- Environmental Product Declaration - EPD (EN 15804) (www.moso.eu/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: 10 years

[1] Tested on 18 mm thickness, without gaps between boards, with ventilation space behind boards.
[2] Tested on 3 years weathered MOSO® Bamboo X-treme®.

Class A | B-s1-d0 | E1 HCHO | EPD EN15804

Class 1 (CEN/TS 15083-2) EN350 | Class 4 EN335 | CO_2 NEUTRAL | 10 YEARS WARRANTY

FSC www.fsc.org The mark of responsible forestry FSC® C002063

breeam

MOSO® Bamboo X-treme®
test results

The excellent performance of MOSO® Bamboo X-treme® 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 X-treme® product.** Other products that copy the original do not offer the same hardness 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, certified MOSO® Bamboo X-treme® products!

SHR

Durability of MOSO Bamboo X-treme, *Heat Treated Strand Woven Bamboo*: resistance against soft-rotting micro fungi according to CEN/TS 15083-2

Report code: 17.0083-C Date: 29 March 2017 Page: 8/14

According to EN 350, the durability class is determined based on the x-value. To calculate the x-value, the median mass loss or the test species is compared to the median mass loss of the Beech or Pine references. Hardwoods are compared to Beech, Softwoods are compared to Pine. As Bamboo is neither softwood nor hardwood a comparison is made with both reference wood species Pine sapwood and Beech.
Based on the mass loss found and the comparison to Beech and Pine, the tested MOSO Bamboo X-treme, *Heat Treated Strand Woven Bamboo,* can be classified in durability class 1 when using the method described in EN 350.
MOSO Bamboo X-treme, *Heat Treated Strand Woven Bamboo*, performs comparable to Azobé and Merbau. Little variance is found between the different boards.

durability
CEN/TS 15083-2 (ENV 807) / EN 350

class 1

SHR

Durability of het treated strand woven bamboo: resistance against degradation by Basidiomycetes according to EN 350 and CEN/TS 15083-1

Report code: 17.0083-B Date: 29 March 2017 Page: 8/14

According to EN 350, the durability class is calculated based on the mass loss obtained with the fungus resulting in the highest median mass loss. For all fungi the mass loss is less than 5%. This implies that, when using the EN 350 to determine the durability, MOSO Bamboo X-treme, *Heat Treated Strand Woven Bamboo* can be classified in durability class 1.

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

class 1

SHR

Resistance of *Heat Treated Strand Woven Bamboo* against blue staining fungi

Report code: 9.061-E 8 September, 2009 Page: 10/10

4 Conclusion

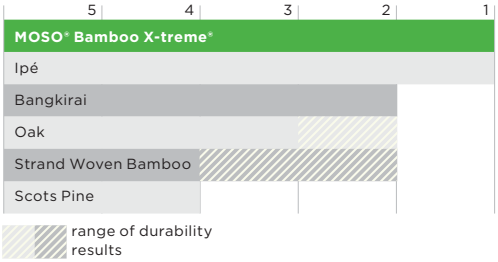
On behalf of Moso International BV an EN 152 blue stain test was performed on Heat Treated Strand Woven bamboo. UV- weathering was used as preconditioning of part of the samples. The combination of UV light and water spray resulted in strong discoloration of the surfaces of both the bamboo samples and the Pine sapwood reference samples.
Neither on the weathered nor on the original Bamboo samples discoloration of the blue stain fungi or the hyphae of the blue stain fungi could be observed. As a result it can be concluded that the susceptibility of this Heat Treated Strand Woven Bamboo towards blue stain is very low.

resistance against surface fungi
EN 152

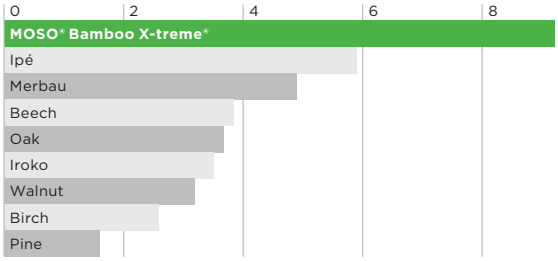
class 0

harder and more durable than almost any other hardwood

durability class
class 1
(EN 350 (CEN/TS 15083-2 / CEN/TS 15083-1)



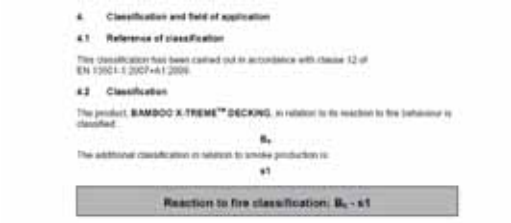
brinell hardness
9.5 kg/mm²
(EN 1534)

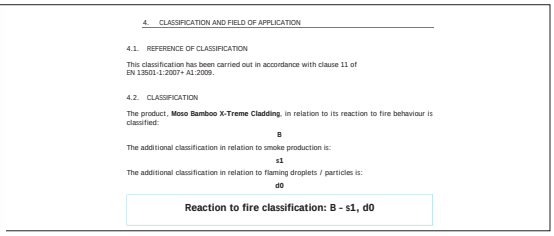


Classification Durability Class

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 X-treme® not tested in salt water.





Classification ASTM E84

Classification	Flame Spread Index	Smoke Developed Index
A	0 - 25	0 - 450
B	26 - 75	0 - 450
C	76 - 200	0 - 450

Carbon Footprint (CO_2eq) per kg final product

PRODUCTION	END OF LIFE	CO_2	CO_2	CO_2
CO_2 footprint CO_2equ/kg	**CO_2 credit** CO_2equ/kg	**Storage** CO_2equ/kg	**Total** CO_2equ/kg	**Neutral** Y / N
1.193	-0.704	-0.607	-0.118	Yes

Eco-costs (€) per kg final product

PRODUCTION	END OF LIFE	ECO-COSTS	ECO-COSTS
Eco-costs Euro/kg	**Eco-costs** Euro/kg	**CO_2 storage** Euro/kg	**Total** Euro/kg
0.356	-0.132	-0.082	0.142

The life cycle and the carbon footprint of MOSO products are evaluated according to ISO 14040/44.
For more information: www.moso.eu/lca
The full report is available on request.

Author:
Dr. Vogtländer J.G. (2014). Life Cycle Assessment and Carbon Sequestration - Update 2014 – Bamboo products of Moso International. Associate professor – Design for Sustainability - Delft University of Technology.

durability
EN 350 (CEN/TS 15083-2 / CEN/TS 15083-1)
class 1

use/risk class
EN 335
class 4

fire resistance
EN 13501-1
decking
class Bfl-s1
cladding, fencing, beams
class B-s1-d0

reaction to fire
(FSI 25 / SDI 45)
ASTM E84
class A
WUI approved
CAN/ULC-S102

carbon footprint
ISO 14040/44
CO_2 neutral

user information for Bamboo X-treme®

Gradual greying of MOSO® Bamboo X-treme® over time: new, non-weathered decking (left), after 3 months of weathering (middle) and after 18 months of weathering (right).

appearance and colour

MOSO® Bamboo X-treme® 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 brown to dark brown colour when installed, which turns into a lighter caramel colour several weeks after installation. Without further maintenance the colour gets greyish relatively fast (similar to most other wood species).

If a brown colour is preferred, maintenance should be done with WOCA exclusive exterior oil teak colour or a comparable waterbased oil/saturator with teak pigments (for the unfinished version).

Direct after installation 1 layer of oil (pre-oiled version) or 2 layers of oil (unfinished version) have to be applied. See for further details the installation instructions. MOSO® Bamboo X-treme® shows similarity to other hardwoods in grain and structure. The characteristic bamboo nodes however can still be recognized and gives the product a special and lively look.

swimming pool

If MOSO® Bamboo X-treme® outdoor decking is to be used around swimming pool areas, the following has to be taken into account: MOSO® Bamboo X-treme® 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 X-treme® are normally smaller than (tropical) hard wood splinters. A regular application of oil (more frequently necessary around swimming pools) is required to reduce the formation of splinters. Furthermore, regular maintenance with the silicium carbid broom or –disk is required to effectively remove splinters and smoothen the surface.

normal phenomena

Cracks on the surface and on the end of the boards can arise from the different drying characteristics of the surface and cross cut ends. This does not affect the stability or durability of the board.

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

Like many wood species, some tannins can come out of the Bamboo X-treme material and into the water when it gets wet, e.g. when it rains. This is a normal phenomenon and will decrease over time. The brownish liquid can easily be cleaned from the Bamboo X-treme material, however be careful of possible staining of materials adjacent to or below the Bamboo X-treme (i.e. white walls underneath a balcony).


wet condition


dry condition

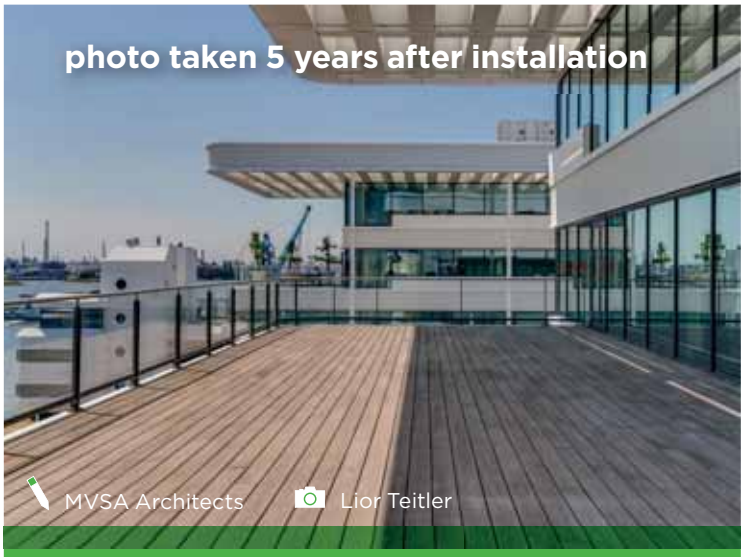
since 2008 over **3.5 million m²** **installed** in more than **60 countries**

WARRANTY 25 YEARS

photo taken 3 years after installation

Mayslits Kassif Architects Lior Teitler

2.5 km Central Beach Promenade
(700 m²) Tel Aviv, Israel



Jumbo Head office
(2.500 m²) Schiedam, The Netherlands

Riberach Hotel
(1.200 m²) Bélesta, France

see the ease of installation, cleaning and maintenance of MOSO® Bamboo X-treme® on:
www.moso-bamboo.com/x-treme

FSC

MOSO® Bamboo X-treme® : the certified & proven bamboo product!

WARRANTY 25 YEARS

durable — Class 1 (CEN/TS 15083-2) EN350 — Class 4 EN335

fire resistant — Class A — B_{fl}-s1

sustainable — CO_2 NEUTRAL

MOSO® BAMBOO X-TREME® certified 100% proven durable - stable - sustainable

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