

bamboo **x-treme** the next generation in decking





**the fast
growing
hardwood
alternative**



bamboox-treme

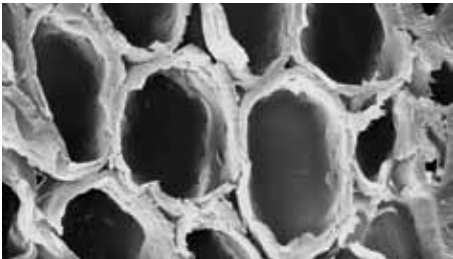
With the introduction of Bamboo X-treme, MOSO has developed a truly **ecological** and **durable** alternative for increasingly scarce tropical hardwood. MOSO uses a unique patented process to alter the **hardness**, **dimensional stability** and **durability** to a level **superior** to the best tropical hardwood species. Although Bamboo X-treme may be used in several outdoor applications, at the moment the main use is for **terrace decking**.

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introduction



Bamboo on molecular level before (left) and after (right) the Density-Thermo treatment: before the sugar molecules are still visible, after the treatment they have disappeared. With this treatment bamboo is no longer a feeding place for fungi and micro-organisms.

Since centuries bamboo poles and bamboo components are used in outdoor circumstances. Unfortunately many additional protective measurements are needed to guarantee a sufficient and acceptable lifetime. In dry circumstances poles will crack and the bamboo inner wood material, due to its high “sugar”-components, will be easily attacked by micro-organisms and fungi. In the land of origin bamboo can be replaced fast and cost efficient, but in Western countries this is not an option. Therefore, wouldn’t it be great to find a way to use one of the fastest growing plants on earth as an alternative for scarce hardwood species and to make the material suitable for outdoor applications?

With this challenge MOSO started to research and test various existing methods to protect bamboo in outdoor circumstances. The initial tested wood protection methods, which are also often used by other bamboo suppliers, were not satisfying and did not perform according to MOSO’s quality standard. Therefore MOSO decided to develop its own way to solve the problem by modifying the density of the bamboo and combining this with a special heat treatment process to improve the durability and stability of bamboo, referred to as “Density-Thermo treatment” in this text. In 2008 MOSO’s invention is registered internationally. The patent registration is currently in a PCT Procedure which will finally lead to patent registration in all European countries and several countries worldwide. In 2009 the relevant laboratory and practical tests were done, which proved that the Density-Thermo treatment is the right method (and currently the only efficient solution) to make bamboo suitable for outdoor applications.

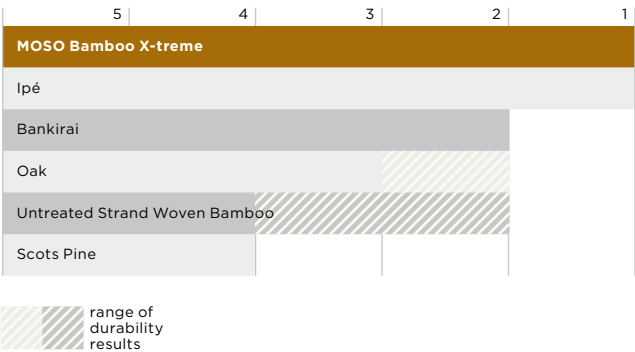
Untreated bamboo has a durability class 5 according to EN350 (not durable). By modifying the bamboo with the Density-Thermo treatment, the dimensional stability of bamboo is improved with almost 50%. Besides stability improvement, the durability is improved to the best durability class possible, from class 5 to class 1 (ENV807 class 1, EN113 class 1 according to EN350).

The density heat treated bamboo is also very well protected against superficial fungi (EN152, Class 0). This bamboo outdoor product reaches, as only bamboo material available on the market, the use/ risk class 4 according to the EN335, which means it can be used in direct fresh water contact, direct earth contact and it does not need any additional treatment.

Doesn’t the Density-Thermo process compromise the environmental sustainability of this product? No it does not: MOSO commissioned Delft University of Technology to execute an official LCA and carbon footprint study according to ISO 14040/44. The report, available on request, concludes that this bamboo outdoor product is CO₂ neutral or better over the full life cycle. In fact, because of the superior durability, the product does not have to be replaced as often as other hardwood species while at the same time taking advantage of the enormous growth capacity of giant bamboo.

The special high density pressing (increasing the density from 650-700kg/m³ to approx. 1200 kg/m³) will more than compensate the disadvantage of material brittleness of heat treated bamboo, and will strongly improve the hardness of this product. After pressing, the material is stronger and harder than almost any other hardwood in the world. That is why we call it: Bamboo X-treme.

durability class according to EN350



discover the bamboo x-treme benefits



hard & durable

- Class 1 in accordance with ENV807 and EN113 / EN350 (more than 25 years in exterior use).
- Durability Class 4 in accordance with EN335 (use/risk class).
- Class 0 fungi resistance in accordance with EN152.
- Exceptionally hard: Brinell > 9,5 kg/mm² (hardest wood available).



high stability

- Very stable as a result of the thermo treatment combined with high density compression.
- More stable than bankirai (yellow balau) and other tropical hardwoods!
- No tendency to torsion.
- No head side gap between boards necessary.
- Only 5-6mm expansion space between (the sides of) the boards.
- Possibility to use pressure impregnated pine as sub frame.



easy to install

- 2 installation possibilities with just 1 product: fastener installation or screw down.
- Both sides of the board - ribbed or flat - can be used.
- Fixed board length 1850mm, easy for 1 person to install, no complicated installation plans necessary.
- Head side tongue and groove for flexible installation.
- Macro bevel on head side, avoiding sharp edges.
- Complementing Density-Thermo sub frame joists available.
- 1 pallet=48.66 sqm=approx. 1.100 kg, therefore easy for transportation and stocking.



economical

- Simple and fast installation.
- Reduced loss of material during installation because of the head side tongue and groove.
- Every plank has been hand checked after production, therefore no loss of material.
- Cost effective transportation because of the fixed 1850mm length.
- Cost effective and space reducing stocking because of unique multi usable board.



beautiful appearance

- A beautiful, natural hardwood look.
- Customer choice for flat or ribbed surface.
- With fastener installation no damage of the boards by screw holes.
- Free of knots and natural plant resins.
- Customer choice for natural greying or keeping brown colour with maintenance.



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).
- Consisting of approx. 90% natural bamboo fibres.



CO₂ neutral

- Official LCA and carbon footprint studies by Technical University Delft according to ISO 14040/44 confirm that Bamboo X-treme is CO₂ neutral or better over the full life cycle.
- No use of fungicide in the production.

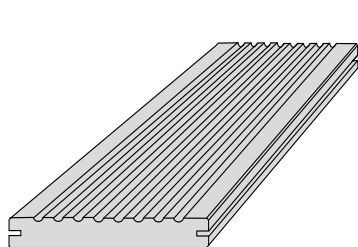


warranted quality

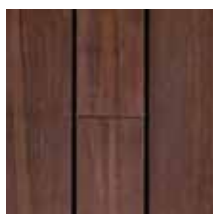
- Bamboo X-treme decking is of the highest quality and comes with a product guarantee of 10 years.
- Patented MOSO product.
- Bfl-S1 fire safety classification according to EN13501-1.

bamboox-treme (outdoor decking)

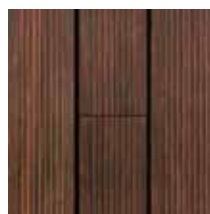
MOSO Bamboo X-treme is a solid, high density bamboo board, made from compressed bamboo strips. Bamboo X-treme is suitable for outdoor applications, especially as decking. A special, patented heat treatment process provides Bamboo X-treme the highest durability class possible in the appropriate EU norms (see technical characteristics below) and increases the density – making it very hard. The special symmetrical shape of the sides offers the possibility to choose between either the ribbed or the flat surface, and allows for quick installation with Cobra fasteners. Like any untreated tropical hardwood species, when exposed to outdoor circumstances, Bamboo X-treme will turn grey over time creating a very natural look.



flat



ribbed



* Available on request, **B**: Bevel (also on headsides), **OW**: Oil Woca, **R**: Ribbed, **F**: Flat

Product Code	Grooved	Edges	Finish	Head-Side	T/G	Dimensions (mm)
BO-DTHT170G	Yes	B	-	R/F	Yes	1850x137x20
BO-DTHT171G	Yes	B	OW	R/F	Yes	1850x137x20
BO-DTHT180G*	Yes	B	-	R/F	Yes	1850x137x18
BO-DTHT181G*	Yes	B	OW	R/F	Yes	1850x137x18

installation summary (full version available on www.moso.eu)

- Install a suitable, stable and durable sub frame.
- Determine which side of the board will be used: the ribbed 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 make sure good ventilation is secured.
- After installation: make sure proper cleaning and maintenance is done, fitting to the chosen finish.
- When not applying outdoor oil 2x per year, the floor 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.
- Final treatment after installation with water based oil/ saturator is necessary for all versions.
- For further info: please see the installation/maintenance instructions.

technical characteristics

- Durability: Class 1 in accordance with EN-350. Tested following ENV807 and EN113.
- Use risk class: Class 4 in accordance with EN335. Tested following ENV807, EN113 and EN152.
- Surface fungi resistance: Class 0 in accordance with EN152.
- Dimensional stability: 24hours submerging in water 20°C: length: + 0,1 % / width: + 0,9%.
- Density: appr. 1200 kgr / m³
- Hardness (EN1534): 9,5 kg/mm² (Brinell)
- Elasticity Modulus (EN408): 10737 N/mm²
- Breaking strength (EN408): 50,30 N/mm²
- Strength class (EN338): D50
- Fire safety class: EN 13501-1: Bfl-s1

warranty

MOSO International BV guarantees the construction and the glueing of the Bamboo X-treme outdoor boards for a period of 10 years from the date of purchase in accordance with the following provisions:



- This warranty does not cover damage caused by misuse, accidents, insect infestation, force majeure and damage caused by other, in normal residential unusual, circumstances.
- Also not covered are purely visual impairments such as imprints, joints, discoloration by light, seasonal climate-related deformation or wear of the surface coating. Damage resulting from improper installation, maintenance, cleaning or maintenance of the surface coating, mechanical or chemical damage are also excluded from this warranty.
- This warranty statement supersedes all previous statements; the granting of the manufacturer's warranty applies only to the current version.

scope

- The Bamboo X-treme outdoor board is a natural forest product, which varies in colour, grain and appearance. Colour changes over time depending on the maintenance schedule. Colour change can not be a reason to make a claim.
- 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 phenomenon is normal for most wood species and can not be a reason to make a claim.
- The surface sides of the boards will get rougher and will splinter over time as a result of constant shrink and swell of the boards due to dry and wet climate periods. This phenomenon is normal for most wood species and can not be a reason to make a claim.
- Dimensional change or cupping of the boards can occur after installation. This phenomenon is normal for most wood species and can not be a reason to make a claim.
- The guarantee extends to A-grade products only.
- The guarantee applies only to the original purchaser and can not be transferred.

warranty conditions

To be able to make use of the warranty the decking must be installed according to the installation instructions. Please read our installation instructions carefully, before installing the floor. No claims can be accepted in case of improper installation!

warranty

- This warranty applies in addition to the normal legal rights of the buyer, including the rights of the buyer against the seller.
- If a claim is granted before installing the material, faulty planks are replaced free of charge. No claims can be accepted after installing the material if the buyer could have detected the defects before installation. This warranty does not cover damage that was caused by third parties (eg transport damage).
- If defects occur after installation, MOSO International BV reserves the right to either repair the defect or to offer material free of charge to the buyer.
- If the defective product is no longer in the product range, an equivalent from the current range will be supplied.
- A claim does not lead to an extension of the warranty period.
- The cost for the replacement of material and other charges are not included in the warranty.

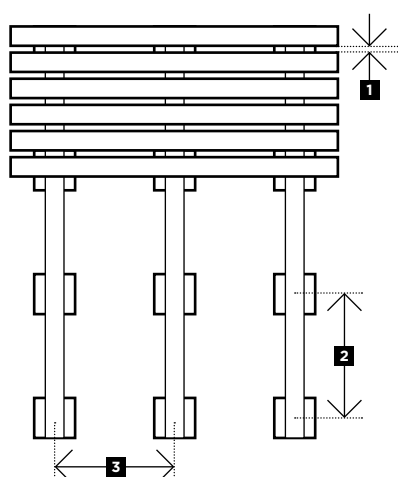
settlement of the guarantee

- The claim must be made in writing, within 30 days, to the MOSO dealer / seller, a MOSO subsidiary or directly to MOSO International BV, de Marowijne 43, 1689 AR Zwaag, the Netherlands.
- MOSO International BV reserves the right to check the claimed damage, after appointment, on site.

installation

before installation

- Water logging under the decking should be avoided by preparing a water permeable ground structure. This can be achieved by sand layers and gravel dispersion above.
- There should be cement/stone tiles 40-50mm thick, to distribute the pressure of the sub frame. See drawing.
- Install the decking boards with a slope of 1-2% to enable water to run off the surface.
- Secure good ventilation of the decking by keeping at least 20mm 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 100mm distance between the decking and the surface underneath the floor.
- Keep at least 5mm expansion space between the boards (in width direction). With fastener installation this is automatically the case.
- Because of the shape of the head side tongue and groove no expansion space is needed on the head side.
- Every head side has to be impregnated with head side wax, to prevent water penetration. Head side wax is available as accessory.
- Use sub frame joists with the minimum size of 40x70mm. Suitable joists are those with the same durability class as the decking; Moso sub frame joists, stable hardwood joists or impregnated pine joists. Avoid direct contact with the earth.
- It is advisable to install the boards on sub frame joists with max 460mm space between the joists centers (board length supported by 5 battens). The maximum distance of the head side joints to the center of the sub frame joist is 150mm.
- Generally the sub frame joists should be installed with ca. 5-8mm distance between the head sides. Moso sub frame joists can be installed without this distance, connecting them with screws and glue suited for outdoor use.



- 1) 5-6 mm
2) Max. 600 mm between support stones/tiles
3) Max. 460 mm between the sub beam axes

please note

- The 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. This phenomenon is normal for most wood species and is minimized for this product by its patented 'Density-Thermo' production method. Head sides cracks can be further minimized by applying wax on cross end sides of the boards as previously mentioned.
- The surface sides of the boards will get rough over time as a result of constant shrink and swell of the boards due to dry and wet climate periods. This phenomenon is normal for most wood species and is minimized for this product by its patented density - heat treated production method.
- Splinters and roughness can be removed by cleaning the surface of the decking with the special 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 patented density - heat treated production method.
- 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.

the installation

installation with fasteners

- Determine the surface side of the boards (ribbed- or flat surface).
- Use the Moso Cobra fasteners or other suitable fasteners in the following sequence:
 - Press fastener in the groove of one board.
 - Pre-drill the screw holes. Mount the screw without fully tightening.
 - Install the following board.
 - Tighten the screw in the fastener and the sub beam.
- Use a plastic hammer on the side of the last installed board to secure the board with space 6mm.
- Use approx. 20 fasteners per/m2. Use a fastener on each sub beam.
- Only use the included stainless steel decking screws (4,5 x 30mm).
- Please watch the installation video http://www.dailymotion.com/video/x571us_film-clip-cobra-20_lifestyle

screw down installation

- Determine the surface side of the boards (ribbed- or flat surface).
- Pre drill the screw holes 20mm 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 5x50mm).

maintenance and cleaning

directly after installation

- Pre oiled: apply 1 additional coat of WOCA exterior oil directly after installation. Follow the instructions of WOCA <http://vimeo.com/33215078>.
- Unfinished: apply 2 coats of water based decking oil/saturator directly after installation. Follow the instructions of the oil/saturator supplier.

prefinished

Bamboo X-treme outdoor decking is double sided, pre-oiled with WOCA exterior water based 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 of WOCA <http://vimeo.com/33215078>. 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 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. Follow the instructions of WOCA <http://vimeo.com/33215078>.
- It is advisable to keep the decking free from dust and dirt as much as possible. (Clean by broom regularly).

unfinished

It is possible to leave the decking without maintenance; the result will be a rough and grey appearance. However, an initial application with water based decking oil/ saturator is necessary in order to impregnate it. After this first application the decking can remain without treatment for natural greying.

- The finish (oil/ saturator) needs to be applied immediately after installation.
- Clean the decking with water and broom. In case you do this immediately after installation, no additional cleaner is needed. Let the decking dry. When the decking is completely dry please follow the instructions of the supplier of the used oil or saturator.
- It is advisable to keep the decking free from dust and dirt as much as possible. (clean by broom regularly)

storing Bamboo X-treme

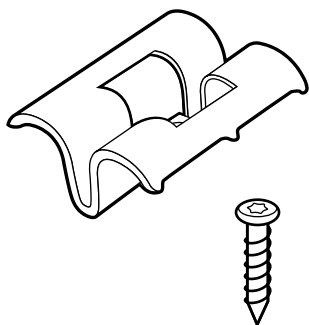
Store Bamboo X-treme in a dry, cool place protected against dust and direct sunlight.

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.bamboo-xtreme.eu

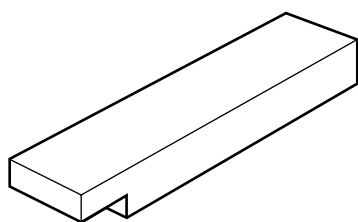
accessories



Cobra® fastener and screw

With these fasteners Bamboo X-treme decking can be easily installed. When installed correctly there will be 5-6mm gaps between the boards. The fastener is supplied with matching stainless steel screws (Torx).

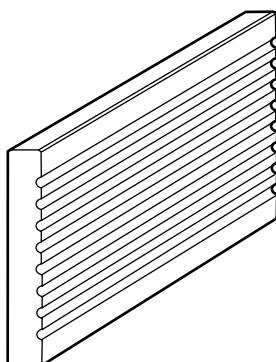
Product Code	Item	Material	Color	Dimensions (mm)
CLIP-SCREW-BX03	Fastener	Stainless steel S201	Black	27x22,5x10,8
	Screw	Hardened steel C1022	Black	4,5x30
CLIP-SCREW-BX04	Fastener	Stainless steel S201	Black	27x22,5x9,8
	Screw	Hardened steel C1022	Black	4,5x30



sub frame joists

The Bamboo X-treme sub frame joists are made of the same material as the decking boards: high density heat treated bamboo.

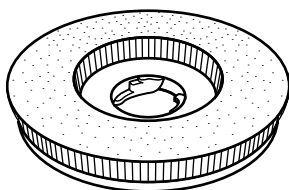
Product Code	Material	Finish	Dimensions (mm)
BO-SB150	High density heat treated bamboo	Unfinished	2440x70x40



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	High density heat treated bamboo	Unfinished	1850x137x20

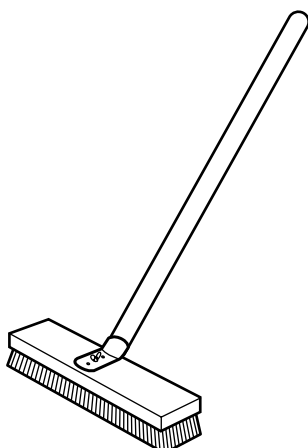


broom stick and disk

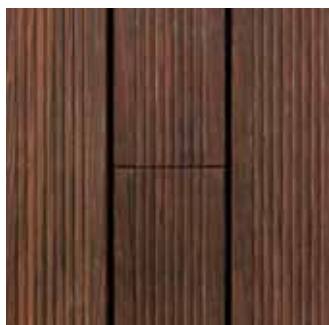
the silicium carbid broom and machine disk are perfectly suited to clean and smoothen the decking surface of Bamboo X-treme and to remove splinters due to the capability to sand the surface in addition to cleaning it.

Product Code	Material
Disk-01	16" Silicium carbid disk

Product Code	Material
Broom-01	Silicium carbid broom



user information



Gradation of greying of 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

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 water based 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.

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.

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 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 climate periods. Dimensional change or cupping of the boards can occur after installation. These phenomena are normal for most hardwood species and Bamboo X-treme.

swimming pool

If Bamboo X-treme is to be used around swimming pool areas, the following has to be taken into account: Bamboo X-treme is a natural (wood like) product and can therefore not be referred to as a “bare foot” product.

As with any wooden product used outdoors, there is always a risk of formation of splinters, however splinters from Bamboo X-treme are normally smaller than (tropical) hard wood splinters.

A regular maintenance with oil (more frequently necessary around swimming pools) is required to reduce the formation of splinters.

Furthermore, regular maintenance with the silicium carbide broom or -disk is required to effectively remove splinters and smoothen the surface.

use of the flat side

When using the flat side of the board as surface side please note that surface deformation (under influence of climatical changes) will be significantly more visible on the flat side compared to the ribbed side. Deformation of the surface is not considered to be a defect of the material.



maintenance & cleaning



Surface of 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 Bamboo X-treme with plenty of water. If possible use a garden hose.
- 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 carbide 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 Bamboo X-treme to dry for approx. 24 hours. The material must be completely dry before oil treatment can be done.

application

- 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.

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.

further information

<http://vimeo.com/33215078>

<http://www.moso-bamboo.com/service/downloads>

test results

The excellent performance of Bamboo X-treme has been extensively tested by MOSO through acknowledged research institutes. Find a summary of the most important test results below. Full reports are available upon request.



Durability of Heat Treated Strand Woven Bamboo; soft rot fungi

Report code: 10.620w2

Date: August 30th, 2011

Page: 8/13

4 Conclusion

Moso International BV in cooperation with Moso Europe SLU commissioned SHR to determine the durability of Heat Treated Strand Woven Bamboo according to EN 350-1 and following the ENV 807 laboratory soil box test using 4 boards of decking.

Based on mass loss of the Beech and Pine sapwood reference samples, the test was declared valid after 12 weeks of exposition to the soil box. The mass loss of the bamboo was comparable to that of the durable reference wood species Azobé and Merbau. The durability of the tested bamboo material was found to be class 1.

durability
ENV807 / EN350

class 1



Durability of Heat Treated Strand Woven Bamboo

Report code: 9.061-D

Date: August 18, 2009

Page: 9/10

4 Conclusion

On behalf of Moso International BV the durability of Heat Treated Strand Woven Bamboo is tested according to EN 113 and EN 350-1. Material originating from 3 different production batches or shipments were tested. Five fungi were used in the test: *Poria placenta*, *Coriolus versicolor*, *Gloeophyllum trabeum*, *Coniophora puteana*, *Donkorporia expansa*. The results obtained with Coniophora, Poria, Coriolus and Donkioporia were used to assess the durability and reproducibility of to production. Based on the test results of the mass loss Moso Heat Treated Strand Woven Bamboo can be classified in durability class 1 and can be produced reproducibly.

durability
EN113 / EN350

class 1



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**
EN152

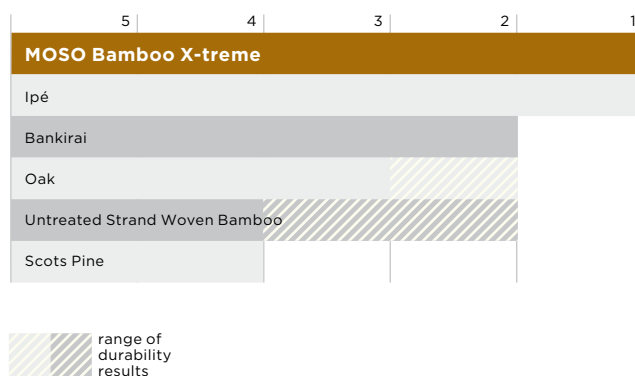
class 0

Use Class	Service situation	Biological agents	Used test standard	Test result
1	Interior, covered	Wood boring beetles	n.a.	n.a.
2	Interior or covered	As above + Disfiguring fungi + Decay fungi	EN152 EN113 / EN350	Class 0 Class 1
3	Exterior, above ground			
4	Exterior, in ground contact and/or fresh water	As above + Soft rot	ENV807 / EN350	Class 1

use/risk class

EN 335

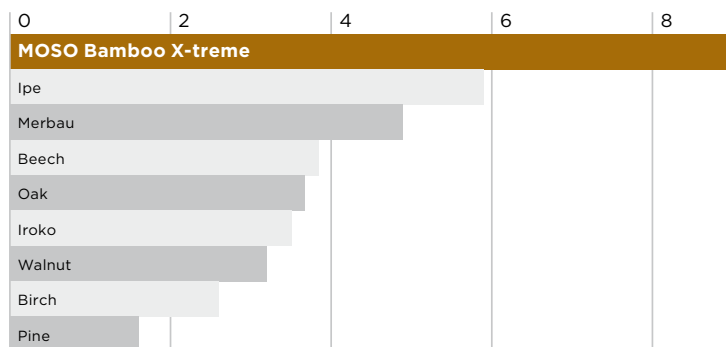
class 4



durability

EN350

class 1



brinell hardness

EN1534

9.5 kg/mm²

Carbon Footprint (CO₂eq) per kg final product

PRODUCTION	END OF LIFE	CO ₂	CO ₂	CO ₂	CO ₂	PRODUCTION	END OF LIFE	ECO-COSTS	ECO-COSTS	ECO-COSTS
CO ₂ footprint CO ₂ eq/kg	CO ₂ credit CO ₂ eq/kg	life cycle CO ₂ eq/kg	storage CO ₂ eq/kg	total CO ₂ eq/kg	Neutral Y / N	Eco-costs Euro/kg	Eco-costs Euro/kg	life cycle Euro/kg	CO ₂ storage Euro/kg	Total Euro/kg
1.670	-1.062	0.6080	-0.6085	-0.0005	Yes	0.429	-0.189	0.24	-0.082	0.158

Eco-costs (€) per kg final product

carbon footprint

ISO 14040/44

CO₂ neutral



The life cycle and the carbon footprint of MOSO products are evaluated according to ISO 14040/44. For more information: <http://www.moso-bamboo.com/bamboo/new/LCA-carbon-footprint>. The full report is available on request.

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Lentini's restaurant - Torino Italy
400 m²



Hotel Riberach - Belesta France
1200 m²



Private house - Lyon France
200 m²



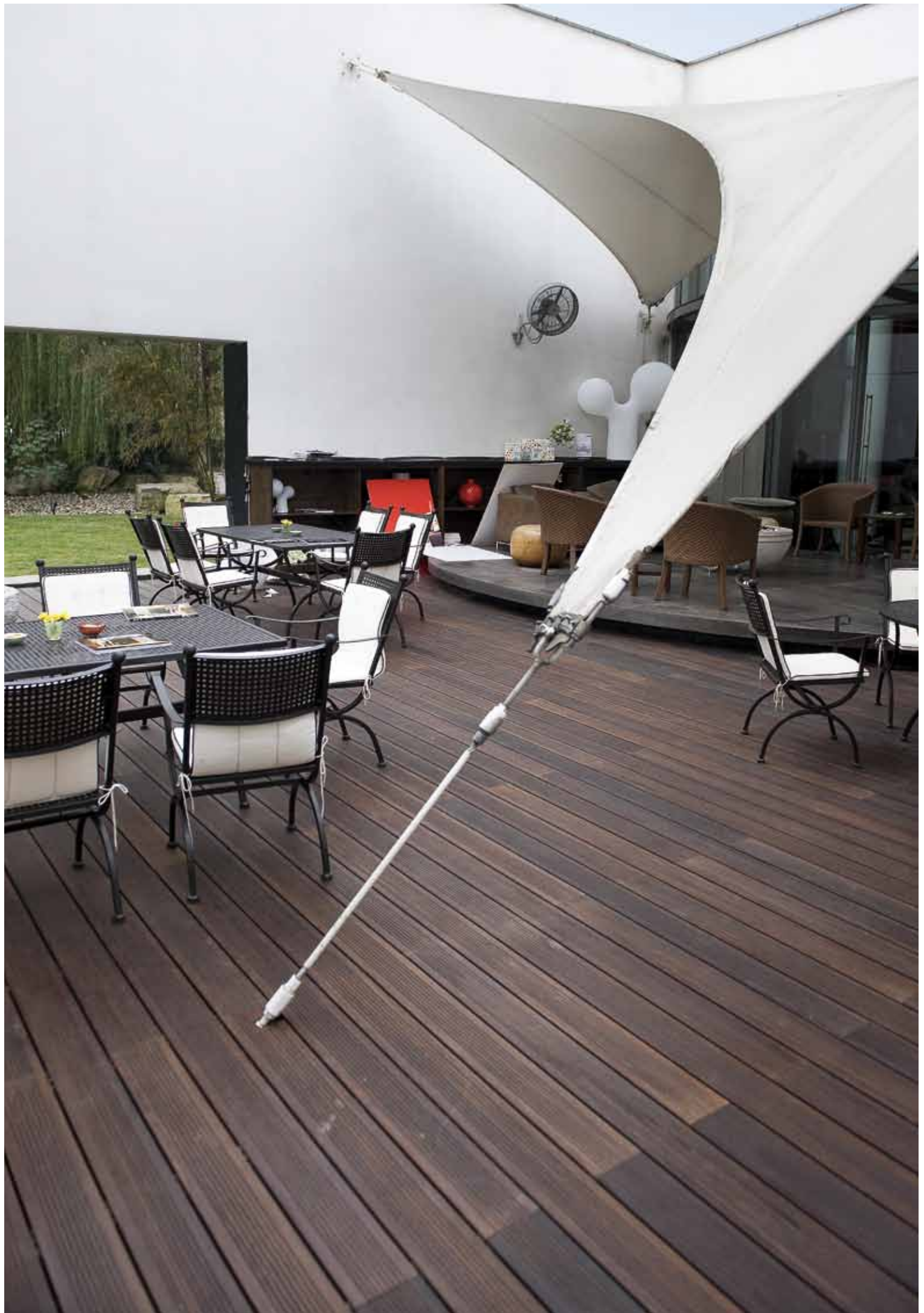
World Expo - Shanghai China
12.000 m²



Restaurant l'Espace 55 - Savoie France
600 m²



Paal 17 - Texel The Netherlands
400 m²



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**bamboo
products**