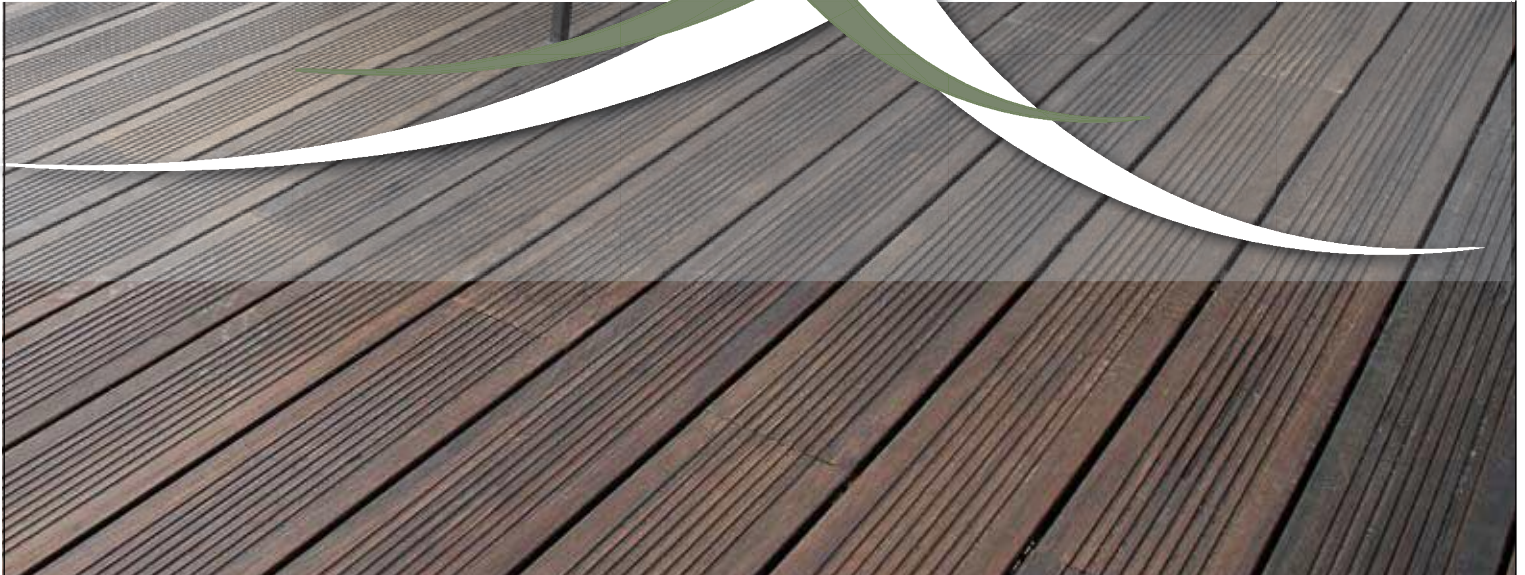




**BAMBOO**

**-TREME**



**bamboo surfaces**

Bamboo X-Treme Catalogue

[www.mosobamboosurfaces.co.uk](http://www.mosobamboosurfaces.co.uk)



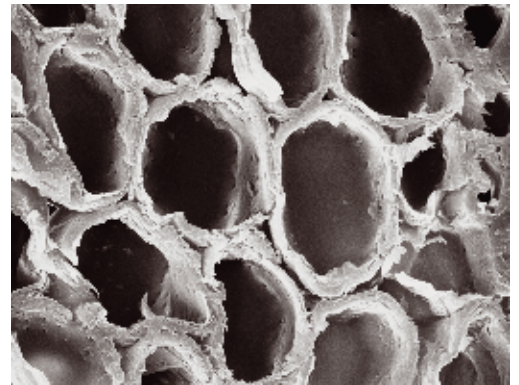
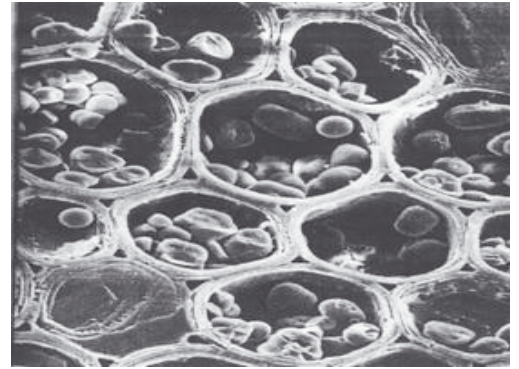
## Introduction

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 drying circumstances poles will crack and the bamboo inner wood material, due to its high "sugar"-components, will be easily attacked by micro organisms and fungus. In the land of origin bamboo can be replaced fast and cost efficient, but in Europe and USA this is not an option.

But, wouldn't it be great to find a way to use one of the fastest growing plants on earth as an alternative for scarce hard wood 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 MOSO's 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 to improve the durability and stability of bamboo. In 2008 MOSO's invention was applied and registered in the Netherlands under patent PCT nr NL2002326 to prepare the registration internationally. 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.

By modifying the bamboo sugar molecules with a special heating procedure, the stability of bamboo is improved with almost 50% and brings



*Bamboo before and after the Thermo-Density 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 fungus and micro organisms.*

bamboo in the best durability class (from class 5 to class 1 according EN113 /ENB350-1) and protects the bamboo against superficial mould and fungus.

The special high density pressing (from 650 - 700 kg / m<sup>3</sup> to approximately 1200 kg / m<sup>3</sup>) will more than compensate the disadvantage of material brittleness of heat treated bamboo. After the high density pressing the bamboo material is stronger and harder than almost any other hardwood in the world. That is why we call it: BAMBOO X-TREME.



# bamboo surfaces

## Bamboo X-Treme Catalogue

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**For further information on our MOSO bamboo products and the service we provide please contact our sales team on:**

**T** 01285 655978

**F** 01285 640655

**E** [sales@mosobamboosurfaces.co.uk](mailto:sales@mosobamboosurfaces.co.uk)

**[www.mosobamboosurfaces.co.uk](http://www.mosobamboosurfaces.co.uk)**

Bamboo Surfaces, MWC Group, Elliot Road, Love Lane, Cirencester, GL7 1YG



## Warranty BAMBOO X-TREME™

**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 can vary in color, grain and appearance. Color can change over time depending on the maintenance schedule. Color change can not be a reason to make a claim.
- Small 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 can get rougher 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.
- Slight 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

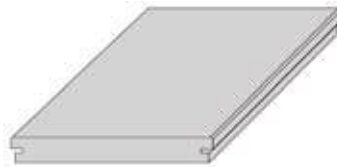
- The claim must be made in writing, within 30 days, to the MOSO dealer / seller, a MOSO subsidiary or directly to MOSO INTERNATIONAL BV, de Marowijne 43, NL-1689AR ZWAAG, Netherlands.
- MOSO International BV reserves the right to check the claimed damage, after appointment, on site.

*Errors and technical alterations reserved*

# BAMBOO X-TREME™ DECKING

## Product

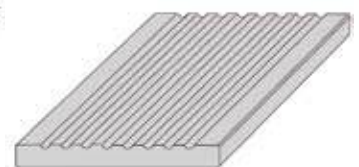
The BAMBOO X-Treme™ decking is a heat treated high density board, suitable for outdoor applications, especially as decking. There are 3 versions available: Version 1 with a groove (to install it using clips) and version 2 also grooved with a ribbed and flat surface. Version 3 is without groove (for screwing installation) and is oiled on both sides (flat or ribbed), so the board can be installed either with the ribbed side up or down. The boards have been finished with WOCA Decking oil.



Version 1  
BO-DTHT161G



Version 2  
BO-DTHT150G  
BO-DTHT160G



Version 3  
BO-DTHT150  
BO-DTHT160

## Product line

Product Code	Grooved	Edges	Finish	Surface	Head-Side T/G	Dimensions (mm)
BO-DTHT150	No	B	OW*	R/F**	No	1860x137x18
BO-DTHT150G	Yes	B	OW	R	No	1860x137x18
BO-DTHT160	No	B	OW*	R/F**	Yes	1850x137x20
BO-DTHT160G	Yes	B	OW	R	Yes	1850x137x20
BO-DTHT161G	Yes	B	OW	F	Yes	1850x137x20

DT = Density

B = Bevel

F = Flat

R = Ribbed

OW = Oil Woca

\* Applied on both sides

\*\* One side flat, one side ribbed, both sides can be used.

## Installation

Please read the full installation instructions on the backside.

## Technical characteristics

- Durability class (EN113 / EN350-1): class 1
- Surface fungus resistance (EN152): class 0
- Dimensional stability: 24hours submerging in water 20 degrees Celsius: length: + 0,1 % / width: + 0,9 % / thickness: + 2,4 %
- 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

*Bamboo is a natural product and, like any other wood, is subject to variations of shades of colors.*



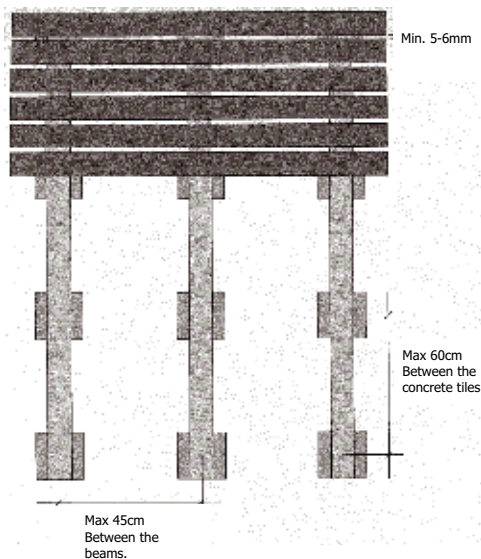
# Installation instruction Bamboo X-Treme™ Decking

## 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.
- Install the decking boards with a slope of 2% to enable water to run off the surface.
- Secure good ventilation of the decking by keeping at least 20 mm expansion space at walls and obstacles and avoid closing the terrace on the sides.
- When the under floor is not fast drying, there should be at least 10cm distance between the terrace and the under floor.
- Keep at least 5 mm expansion space between the boards.
- Use under construction beams in the minimum size of 40x70 mm. Avoid direct contact with the earth.
- Advisable is to install the boards on under construction beams with 450 mm space between the beams (board length supported by 4 battens).
- There should be cement/stone tiles 40-50mm thick, to distribute the pressure of the under construction. See drawing.
- The under construction beams should be laid with ca. 8mm distance in between.
- It is advisable to apply wax on end sides and cross cut board ends to avoid easy water penetration.

## Please note

- The BAMBOO X-TREME™ outdoor board is a natural forest product, which can vary in color, grain and appearance. Color can change over time depending on the maintenance schedule.
- Small 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 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.
- The surface sides of the boards can get rougher 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.
- 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 patented density – heat treated production method.



## The installation

### TYPE BO-DTHT150G-AD / BO-DTHT160G-AD / BO-DTHT161G-AD:

- Use the MOSO recommended clips in following sequence:
  - Fix clip in the groove of one board.
  - Pre-drill the screw.
  - Install the following board.
  - Drill the screw down fully in the sub beam.
- Use 20 clips per / m<sup>2</sup>. Use a clip on each sub beam.
- Use A2 stainless steel screws (ca. 4x40mm)

### TYPE BO-DTHT150-AD / BO-DTHT160-AD:

- Determine the surface side of the boards (waved surface or non-waved surface).
- Pre drill the screw hole.
- Always use 2 screws on each side (of the width) of the board.
- Use A2 stainless steel screws (ca. 5,5x50mm)

## Maintenance and cleaning

The surface side of the BAMBOO X-TREME™ outdoor board is pre oiled with WOCA air dried outdoor oil.

- It is advisable to keep the decking as much as possible free from dust and dirt (clean by broom regularly).
- Clean the floor at least one time per year with WOCA Decking Cleaner. Follow the instructions from WOCA ([www.woodcaredenmark.com](http://www.woodcaredenmark.com)).
- Remove the soap and dirt water residue on the boards with clean water and let the floor dry.
- Apply a new layer of WOCA Decking Oil. When not applying new outdoor oil 2x per year, the floor will turn in to a grey color tone and the distinguishing bamboo wood grain structure will become less visible. Follow the instructions from WOCA ([www.woodcaredenmark.com](http://www.woodcaredenmark.com)).
- Give the floor enough drying time before use.

## Additional note

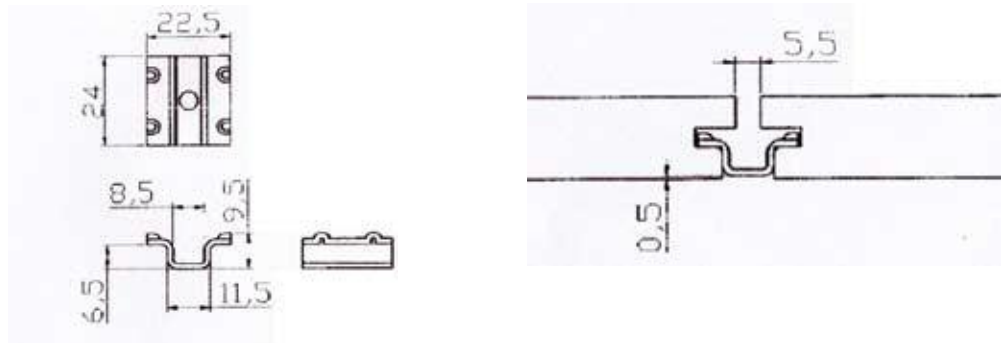
Whilst all due care is taken to ensure the accuracy of the installation instructions, individual circumstances (location, sub floor and installation procedures) may vary and are beyond the manufacturer's control. In case of doubt, therefore, consult the distributor.

These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).

## BAMBOO X-TREME™ ACCESSORIES

### Fasteners

With these fasteners the grooved versions of BAMBOO X-TREME decking can be installed. They are made of stainless steel (AISI 304). When installed correctly they will result in 5-6mm gaps between de boards.



Product Code	Material	Thickness	Dimensions (mm)
CLIP-BX01	Stainless steel AISI 304	1mm	24x22.5

# Cleaning



## How to do...

- 1 Soak the wood with plenty of water. If possible use a garden hose.
- 2 Mix Decking Cleaner with water in the ratio 1:2 and apply it with stiff brush. By extreme dirt the Decking Cleaner may be used undiluted. Scrub the soaked wood lengthwise the wood grain till the wood appears clean. Repeat the cleaning if necessary. Clean tools in water.
- 3 Leave the surface to dry for 3-4 days. Wash down carefully with water and remove any loose particles with a stiff brush.
- 4 Leave the wood to dry for approx. 24 hours. The wood must be completely dry before oil treatment. Remove fibre rising with sandpaper.

## WOCA Decking Cleaner

- for the cleaning of wood deckings

Decking Cleaner is for the cleaning of wood decking, fences, doors, carports etc. The product removes green growth and dirt. Decking Cleaner is also very suitable for the cleaning of brickwork and concrete plates. The cleaner does not impact on the vegetation.

### Available in

Decking Cleaner is available in 2,5 litre container.

### Tools

Medium hard nylon brush, plastic bucket, and a garden hose for the rinsing.



### Decking Cleaner

2,5 litre  
Consumption:  
6-10 m<sup>2</sup>/litre.

# Maintenance



## How to do...

- 1 Treat new decking timber with oil before use. Clean thoroughly before starting the treatment. For old decks, clean before treatment using Decking Cleaner, then let the wood dry for approximately 24 hours. Make sure the wood is completely clean and dry. Sand down any wood fibres with fine sandpaper. Perform the treatment in dry weather only. Avoid direct sunlight and high temperatures.
- 2 Stir the oil thoroughly before use. Apply the oil evenly using a brush or paint roller. Treat the cross-cut ends first. Remove any excess oil with clean cotton cloths after no more than 20 minutes. Take particular care to remove excess oil from joints and grooves. If the surface does not appear to be saturated with oil, repeat the treatment. It takes 24 to 48 hours for the oil to harden completely, depending on weather conditions and outdoor temperature. The wood must not be exposed to water during this period.

## WOCA Decking Oil

- for the basic oil finishing of decking

Decking Oil should be used outdoors for basic treatment and maintenance of decking timber. The oil gives the wood a resistant surface and a golden colour, enhancing the wood grain. Decking Oil is available in several natural wood colours. All variations have UV protection.

### Available in

Decking Oil is available in natural (without colour pigments) and in the colours teak, bangkirai, pine, larch, douglasie and red-brown in 2,5 litre container.

### Tools

Brush, cotton cloths and possibly sandpaper.

### *Please notice!*

*Risk of self-ignition: Due to the risk of self-ignition it is important that oil wetted cloths are soaked with water and disposed of in a tightly closed container.*



### Decking Oil

2,5 litre

Natural, teak, bangkirai, pine, larch, douglasie and red-brown.  
Consumption: 10-13 m<sup>2</sup>/litre

18

## Important Information

### Appearance and color

BAMBOO X-TREME™ is a natural forest product, which can vary in color, grain and appearance. Color can change over time depending on the maintenance schedule. The boards have a dark brown color when installed, which turns into a lighter caramel color after several weeks after installation. Without further maintenance the color gets greyish over time (similar to most other wood species). BAMBOO X-TREME™ shows in grain and structure similarity to other hard woods. The characteristic bamboo nodes however still can be recognized and gives the product a special and lively look.



*Original colour and colour after some time without maintenance.*

### Normal phenomena

Small 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. The surface sides of the boards can get rougher over time as a result of continuous water absorption and desorption of the boards due to dry and wet climate periods. Slight dimensional change or cupping of the boards can occur after installation. These phenomena are normal for most wood species and are minimized for this product by its patented density – heat treated production method.

## Unique selling points

- Extraordinary, beautiful bamboo look, terrific design.
- High stability (improved by density and heat treatment)
- Very limited shrink/swell
- More stable than for example Ipe lapacho
  
- Durability class 1
- Fungus resistance class 0 (the highest possible)
- Limited tearing
- Extremely hard (ca. 9.5 Brinell)
- No knots and resins
  
- Fixed length 1860 mm, therefore easy to install
- Tongue/groove on headside
- Usable on both sides
- Choice between ribbed and flat surface
- Choice between installation screwed or with clips
  
- Factory finished with WOCA air dried oil
- Easy maintenance with WOCA Decking oil.
- Natural greying
  
- Patented and guaranteed MOSO® Product
  
- Bamboo is not a tree but a grass. Bamboo grows very fast: within 5 years the stems are ready to harvest. After harvesting the mother plant new shoots continue to develop from the root system. Therefore bamboo is a rapid renewable and very ecological raw material.





# Test report durability



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 Internationa BV the durability of Heat Treated Stand 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*, *Donkporia 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.

## Literature

- EN 84:1997: Wood preservatives - Accelerated ageing of treated wood prior to biological testing - Leaching procedure
- EN 113 1996: Wood preservatives – Test method for determining the protective effectiveness against wood destroying Basidiomycetes – determination of toxic values.
- EN 350-1 1994: Durability of wood and wood-based products – Natural durability of solid wood – Part 1: Guide to the principles of testing and classification of the natural durability of wood.
- BRL 0605 (dated 31-01-2003). National Assessment Directive for the KOMO® Product Certificate Modified Timber. Stichting Keuringsbureau Hout SKH, Wageningen, the Netherlands.
- SKH Publicatie 97-04 (New draft 13 april 2006). Evaluation standard for wood species for application in timberwork: requirements and evaluation methods. Stichting Keuringsbureau Hout SKH, Wageningen

# Test report resistance against fungi



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.

## Literature

Acker J van, Klaassen R, Militz H & M Stevens. 1997. The development of blue stain in service in sapwood of European softwood species. IRG Document Nr. IRG/WP/97-10236. International Research Group on Wood Preservation, Stockholm, Sweden.

NEN-EN 152-1:1991 en; Wood preservatives - Laboratory method for determining the protective effectiveness of a preservative treatment against blue stain in service - Part 1: Brushing procedure

NEN-EN 152-2:1991 en; Wood preservatives - Laboratory method for determining the protective effectiveness of a preservative treatment against blue stain in service - Part 2: Application by methods other than brushing

NEN-EN 927-6:2006 en; Paints and varnishes - Coating materials and coating systems for exterior wood - Part 6: Exposure of wood coatings to artificial weathering using fluorescent UV lamps and water



# BAMBOO X-TREME™

## Style and Ecology

- Extraordinary, beautiful bamboo look.
- Bamboo is not a tree but a grass. Bamboo grows very fast: within 5 years the stems are ready to harvest. After harvesting the mother plant continues to develop new shoots from the root system. There for bamboo is a rapid renewable and very ecological raw material.

## Durable

- Durability class 1
- Fungus resistance class 0 (the highest possible)

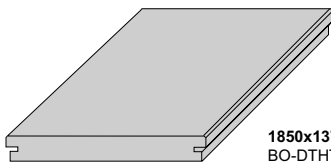
## Stable

- High stability (improved by increased density and heat treatment)
- Extremely hard (approx. 9,5 Brinell)

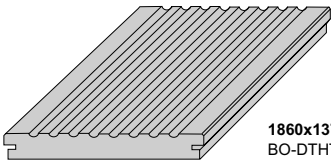
## Easy to Install

- Fixed length, therefore easy to install
- Tongue/groove on head side
- Usable on both sides; Ribbed and Flat
- Choice between installation screwed or with clips
- Factory finished with WOCA air dried oil
- Easy maintenance with WOCA Decking oil.

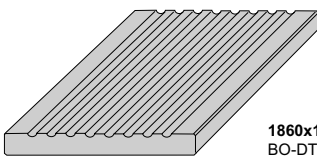
- Patented and guaranteed by MOSO®



1850x137x20 mm  
BO-DTHT161G-AD



1860x137x18 mm / 1850x137x20 mm  
BO-DTHT150G-AD / BO-DTHT160G-AD



1860x137x18 mm / 1850x137x20 mm  
BO-DTHT150-AD / BO-DTHT160-AD



For further information on our MOSO bamboo products and the service we provide please contact our sales team on:

T 01285 655978

F 01285 640655

E [sales@mosobamboosurfaces.co.uk](mailto:sales@mosobamboosurfaces.co.uk)

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