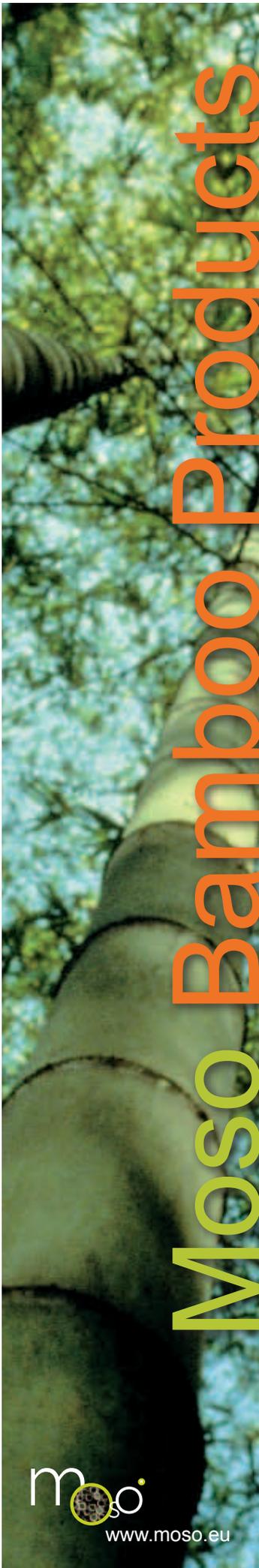


# Moso Bamboo Products







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www.moso.eu

## Company information

MOSO International B.V. is specialized in the development of innovative and trend-setting products made of bamboo. The 3 product categories of MOSO are:

- **flooring & floor covering**
- **panels & panel covering materials**
- **decking**

The company name MOSO is derived from a giant bamboo, the "Phyllostachys pubescens". MOSO is the Chinese word for this species of bamboo, which supplies the raw material for all MOSO products and grows in abundant quantities in China (estimated 8 million hectares).

It is for that reason that a big part of the MOSO organisation is located in China. From their own office, nearby Shanghai, 10 people are managed. Their foremost task is the quality control at the different factories. Not only the end product is checked, but Moso people are present continuously and they inspect the production at various stages.

In addition to the Chinese office, MOSO has further interests in China: nearby the city of Hangzhou a joint venture has been established, especially for the production of bamboo veneer. At this moment approximately 150 people work in this factory, which is called **DMVP Timber Bamboo Ltd.** MOSO has made sure that the production runs entirely according to Western standards and have even added Dutch people to the management.

The rest of the MOSO organisation is located in the Netherlands and Germany. From the main office in Zwaag (nearby Amsterdam) 25 people see to the world wide sales of the MOSO products. In Germany another 3 persons have been appointed,

especially to guide this market.

In Europe MOSO uses a network of agents, who all serve their own region. In addition, MOSO cooperates with a number of leading distributors in Europe and the United States.

For the South-European market MOSO has set up an office and warehouse in Barcelona. For the Italian market a dedicated partner was found in the company Maderclass Italia.

In the meantime, MOSO already exists 10 years and, with its broad experience, is now able to satisfy even the highest customer requirements. For example: MOSO has supplied the bamboo for the main office of **Toyota** in Brussels and also for the **Bodyshop** stores in Europe. For certain applications, the 'standard product' is not adequate. In that case, MOSO can supply products which are 'custom made': in cooperation with the architect or designer a completely new bamboo product is created. For example: MOSO supplies the bamboo veneer for the dashboards of various **BMW** models. Another example is a ceiling panel, which complies with the strictest fire resistance norms in Europe: 200.000m<sup>2</sup> of this product have been installed in the **Barajas airport** in Madrid.

MOSO has evolved into the European market leader on the field of bamboo: there is no other company which offers an equally large, high quality, assortment and which is still expanding.

## Misunderstandings about bamboo

### 1. Aren't all bamboos alike?

No wood supplier will tell you that all types of trees provide the same quality of wood or even that any one type provides the same quality of wood from one tree to the next. The same can be said for bamboo. There are more than 1,300 species of bamboo worldwide. *Phyllostachys pubescens* or the MOSO species, is found in low mountain areas of eastern China where temperatures can dip below freezing in the winter and reach over 100 F in the summer. Similar to any species of wood, bamboo exhibits subtle differences in hardness, thickness and grain structure as a result of differences such as soil chemistry, hours of sunlight and temperature cycles.

The MOSO bamboo species needs 5 years to grow to adult height and to be hard enough to be processed. The moment of the harvest is important for the quality of the bamboo. In order to manufacture a quality product from bamboo, a lot of attention needs to be paid to the place where the bamboo is grown and how it is harvested. Determining the origin and age of the bamboo is one of the daily tasks of the MOSO-organisation in China.

### 2. Is bamboo really environmentally friendly?

Determining how environmentally friendly a product is usually is not very easy. The environmental balance for bamboo is certainly positive.

The ways in which it is grown and harvested are important environmental arguments. Every year the parent bamboo plant develops new stems, so the stems can be harvested after 5 years in a mature plantation without decreasing the size of the forest. Regular harvesting actually improves the bamboo's growing power. This way of working results in an even faster growth of new shoots and guarantees perfect quality for the following harvest. A large part of the *Phyllostachys Pubescens* reservoir is managed by farmers on plantations. The farmer marks his "ownership" and notes the year of origin on every new stem.

Moso also opts for an environmentally friendly approach for the processing of bamboo strips to make flooring and panels. A lot of the energy required in the factory comes from the burning of sawdust and bamboo leftovers. Concerning the glue, MOSO exclusively cooperates with European suppliers. As a result, the quality is guaranteed and all

glues used by MOSO easily meet the requirements set out in the E1 norm.

### 3. Is the panda threatened by MOSO?

No, Pandas (the giant panda and the small panda) live in the central mountain ranges of central China. Pandas go to places where the lower species of bamboo are easily accessible. The high Moso bamboo, *Phyllostachys Pubescens*, has no leaf growth on the first 5 metres of the stem and is therefore not a source of food for the panda.

## Moso Bamboo and The Environment

### INTRODUCTION

Bamboo is not a wood, but a grass species. There are about 1300 different bamboo species of which 300 develop a "woody" pole, meaning that the material obtains actual wood characteristics (hardness, elasticity, shrink/swell, etc). Approximately 100 species are commercialized. The bigger (woody) bamboo species belong to the fastest growing plants / trees on earth. These bamboos will grow in 2 - 4 months to its full length. The species used by MOSO (actually called 'moso' or its botanical name: *Phyllostachys Pubescens*) can grow to 20m in that period! After that, the plant needs 4 years to develop a full wood structure. Every year new shoots will grow from the mother plant. Generally 25% of the poles in a bamboo forest or plantation can be harvested per year without decreasing the size of the plantation or the number of poles per hectare. By harvesting the older poles, more energy (light, water) is available for the remaining forest – therewith increasing the quality of the forest.

### RESOURCES AND LOCATIONS

Bamboo resources in China are estimated to be 6,000,000 hectares and can be found in several provinces. The bamboo used for MOSO products comes from:

- Zhejiang Province: Lishui county and Anji county
- Jiangxi Province: Fuzhou county and Yintan county
- Fujian Province: Nanping county, Sanming county and Longyan county

In the last decade, with a fast growing industrial utilization of the bamboo, the resources in China have been kept stable. Programs are in preparation (not only in China) to set up new bamboo plantations and to enlarge the currently existing resources. Compared to wood forests, bamboo plantations can be developed and become mature within 7 – 10 years, securing yearly harvesting of about 25% of the poles.

### HARVESTING PRACTISES AND CONTROL

The resources used for industrial bamboo products (like bamboo veneer, panels, tambour and flooring) are 'controlled forests', which are used by farmers. Each

year farmers harvest a part of the poles and sell these poles to processing industries (mostly strip producers who make the strips for specific products like flooring, panels, chopsticks, curtains, etc)

Harvesting of bamboo forest is controlled under the authority of The Forestry Bureau of China and local forestry administration. Following control procedures are applicable:

- A survey of forest resources is organized every 5 years by The Forestry Bureau of China to establish the size of all the forest resources.
- Based on the survey results and the principle "harvesting quantity must be less than growing quantity", the forestry administrations of provinces make a plan of how much may be harvested.
- The County Department distributes the allowed harvesting quantity to all the counties, towns and state-owned farms.
- All the farmers have to apply for a "Forestry Logging Permit" before they can harvest.

### INDUSTRY SELF CONTROL

Environmental aspects of harvesting and production are becoming more and more important for the industries itself. The main bamboo flooring and veneer manufacturers are member of the Chinese Bamboo Flooring Association, which is a part of the Chinese Flooring Association. The Chinese Flooring Association stays in direct contact with the Ministry of Forestry in China. The members have the obligation to respect the above described harvesting procedures and exchange information on environmental issues for further improvements.

## Moso Bamboo and The Environment

### FORMALDEHYDE EMISSIONS

Formaldehyde is a natural element which exists in all products. All materials around us emit formaldehyde (during time the emission decreases). A surplus of formaldehyde can be dangerous to human beings and that is why strict norms have been created to control the emissions of formaldehyde (i.e. E-norms in Europe, CARB in the USA).

MOSO uses materials in their products (mostly glues) with very low emissions. As a consequence, all MOSO products comply with the strictest norms. In Europe this is currently the E1 norm. It can be expected that the norms will be tightened in the near future (E0) and MOSO is already prepared: on request MOSO can use formaldehyde free glues (so called NAUF glues: No Added Urea Formaldehyde).

### CO<sup>2</sup> BALANCE

In various researches it has become clear that bamboo is an important and very fast CO<sub>2</sub> 'fixator'. This means that bamboo absorbs, during its growth and life until harvest, a relative big amount of CO<sub>2</sub> from the air / atmosphere. After the harvest this CO<sub>2</sub> will remain in the material and will only be released when this material is burnt.

On the other hand CO<sub>2</sub> is created by machines and transport means which are needed to produce the bamboo products and bring them to the customer. It is very important to keep the emission of CO<sub>2</sub> during this process as low as possible. By comparing the CO<sub>2</sub> fixation with the emission during production/transport the CO<sub>2</sub> balance can be determined. When the CO<sub>2</sub> fixation is larger than the emission, the product is CO<sub>2</sub> neutral. Research has shown that most MOSO bamboo products are CO<sub>2</sub> neutral. Calculations are available upon request.

### FSC

FSC means 'Forest Stewardship Council'. The Forest Stewardship Council is an independent, non-profit organization which promotes the responsible management of forests around the globe. They are non-governmental, and their list of requirements is decided by group consensus. They were established in 1993 to address exploitation and mismanagement

of forests, and to emphasize their social and ecological value. Certification ensures that companies that work in forested areas share and maintain FSC's core values.

Over the years, FSC has become an important international standard. However, for bamboo it has always been questionable if FSC certification is really necessary: bamboo is not a wood, it is a grass. And to produce bamboo products no deforestation is necessary or even possible: only the 5-6 years old plants are harvested.

The practical problem was that a lot of building contracts simply required FSC only materials. This would exclude bamboo automatically. In 2004 FSC has allowed bamboo into their system. In 2009 MOSO was FSC certified and so was the bamboo veneer (joint venture) factory DMVP. Although the FSC certified bamboo raw material is still rare, MOSO and DMVP can now offer FSC certified bamboo.

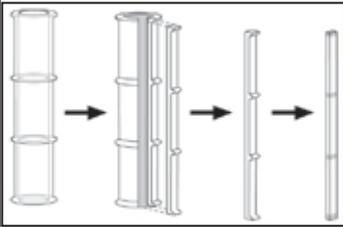
### MOSO INSPECTION AND CONTROL

To secure and guarantee environmentally sound practises and maintaining working procedures, MOSO has its own daily control activities executed by MOSO's representative company in Shaoxing (100% subsidiary of MOSO International BV).

### CONCLUSION

Bamboo is an environmentally sound material, which is cultivated in a very responsible manner. Control and monitoring systems are operational and function well to avoid over harvesting and to secure the protection of the resources. MOSO transforms this material, using environmentally sound techniques and materials.

# The transformation of the bamboo stem



## Making the strips

The bamboo stem is cut in length direction into strips. The outer green skin of the bamboo strip is removed. The strips are treated against mould and insects. They can be boiled (steamed) so that the sugars burn off and the material turns a caramel-brown colour. The strips are then kiln dried.

## The strips can be connected in different ways:



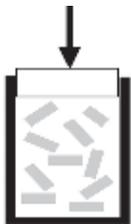
### 1. Pressing horizontally: PLAIN PRESSED

The bamboo strips are placed horizontally and glued together under high pressure. The resulting board or panel will show the characteristic node pattern of bamboo.



### 2. Pressing vertically: SIDE PRESSED

The bamboo strips are placed sideways and glued together under high pressure. The resulting board or panel will show a narrow line pattern with the bamboo nodes subtly visible.



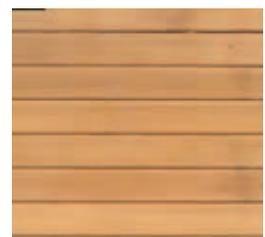
### 3. Compressed : HIGH DENSITY

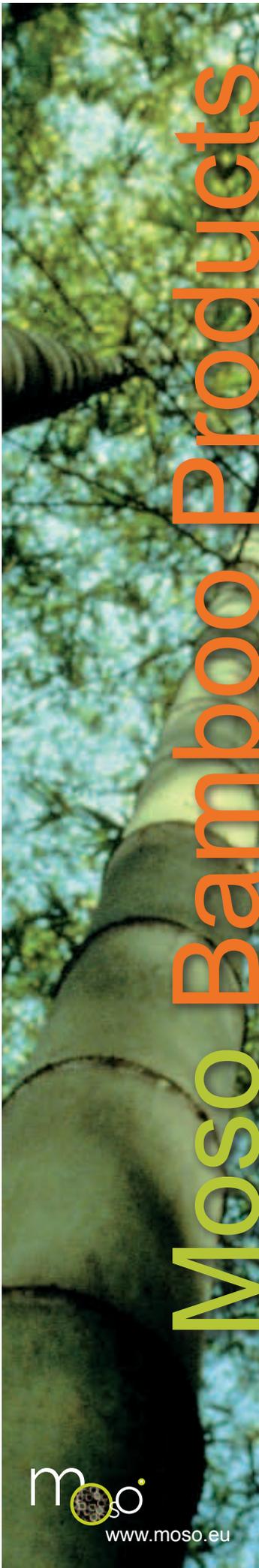
In this case the strips get compressed before they are glued. In this process the bamboo strips are pressed to fibers. After glueing a very elegant line pattern is created and in addition the product is more than twice as hard as the 'traditional' bamboo (as described above).



### 4. Flexible: TATAMAT / PANDA / ZEN

In this case the strips are not glued together, but glued onto a fabric backing. Before doing so, the strips are connected by means of a weaving thread (TATAMAT look) or by a tape on the back side (PANDA and ZEN look).





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## Warranty MOSO bamboo flooring

**MOSO INTERNATIONAL BV guarantees the construction and the glueing of the individual layers for a period of 30 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 or damage caused by moisture effects 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 guarantee extends to A-grade products and to the exclusive use in normal used spaces.
- The guarantee applies only to the original purchaser and can not be transferred.

### Warranty Conditions

To make use of the warranty the following conditions must be fulfilled.

- Proper Installation: Please read carefully, before laying the floor, our installation instructions. You can find these in any original package and in addition on the internet at [www.moso-bamboo.com/service/downloads](http://www.moso-bamboo.com/service/downloads). In particular, you should pay attention to the moisture content of the sub floor and to the conditions for laying on floor heating. No claims can be made in case of improper installation!
- Proper care and cleaning: Important information for optimal cleaning and care can be found in each of the original package or on the Internet at [www.moso-bamboo.com/service/downloads](http://www.moso-bamboo.com/service/downloads). No claims can be made in case of improper care and or cleaning!
- Proper maintenance of the coating: The wear of the coating is not part of the warranty. If the coating surface shows signs of wear, in whole or in part, it must be timely renewed in order to protect the material. No claims can be made in case of improper maintenance of the surface coating.

### 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 laying the material, faulty planks are replaced free of charge. No claims can be made after laying 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

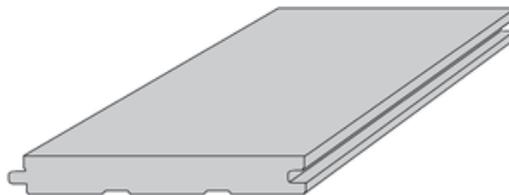
- The claim must be made in writing, within 30 days, to the MOSO dealer / seller, a MOSO subsidiary or directly to MOSO INTERNATIONAL BV, de Marowijne 43, NL-1689AR ZWAAG, Netherlands.
- MOSO International BV reserves the right to check the claimed damage, after appointment, on site.

\* ) Exception: Topbamboo, Unibamboo and MOSO flooring-on-a-roll (10 years)

# Moso® Solid strip

## Product

The MOSO solid floor boards have tongue and groove and consist of 1 or more layers solid bamboo.



## Product line

Code Natural	Code Caramel	Style	Edges	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m <sup>2</sup> )
<b>BF-LA510</b>	<b>BF-LA560</b>	SP	SE	-	960x96x15*	24	2,212
<b>BF-LA710</b>	<b>BF-LA760</b>	PP	SE	-	960x96x15	24	2,212
<b>BF-LA610</b>	<b>BF-LA660</b>	SP	MB	L	960x96x15*	24	2,212
<b>BF-LA810</b>	<b>BF-LA860</b>	PP	MB	L	960x96x15	24	2,212

PP = Plain pressed  
 SP = Side pressed  
 SE = Sharp edge  
 MB = Micro bevel  
 L = Lacquered Bona 80 gr/m2  
 \* = Also available with top layer 6mm

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/ m<sup>3</sup>
- Fire class: EN 13501-1: Cfl-s1
- Thermal conductivity:  $\lambda = 0,17 \text{ W / (m}\cdot\text{K)}$
- Thermal resistance:  $R = 0,088 \text{ m}^2\cdot\text{K/W}$
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)



www.moso.eu

# Installation instruction MOSO® solid strip

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## The gluing

- This flooring type should be fully glued on the sub floor. It can be glued directly on the screed (like sand cement or anhydrite) if it is level, without cracks, dry, clean and stable. It is often advised to place a chipboard or plywood to deal with possible problems in the sub floor.
- This way of installation requires specialist materials and skills. Only a recognised contractor should be used for the installation.
- Floating installation is possible, but in that case the maximum width of the floor is approx. 5 metre and the maximum length is approx. 12 metre. Expansion gaps minimal 10-15 mm
- Advised adhesive: a 2-component polyurethane. Please note that hardened adhesive can only be removed from the varnished surface using mechanical means, which may lead to damage to the protective finish.
- For porous surfaces dispersion glues (with a low water content) or synthetic resin adhesive with low solvent content can be used.
- Elastic adhesive systems like 1-component Polyurethane or silan type of adhesives only can be used, when:
  - Shear strength  $T_s > 1.4 \text{ N / mm}^2$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)
  - Shear elongation  $\gamma \geq 0.5$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)Please ask your glue supplier for more information.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Finish untreated flooring

- After the glue has hardened, the floor can be sanded and filled (with a mixture of sanding dust – 100 grit- and floor filler).
- Bamboo flooring can be lacquered, oiled or waxed. For oil: note that bamboo has a dense surface structure, therefore apply oil thinly and allow to dry between applications.

## Maintenance and cleaning

- Initial maintenance: in case of a pre finished floor (lacquered or oiled), initial maintenance should be carried out after installation is complete.
- Cleaning and care: The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance.
- For further information, look at [www.woodcaredenmark.com](http://www.woodcaredenmark.com) for pre-oiled and [www.bona.com](http://www.bona.com) for pre-lacquered finishes.

## 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.

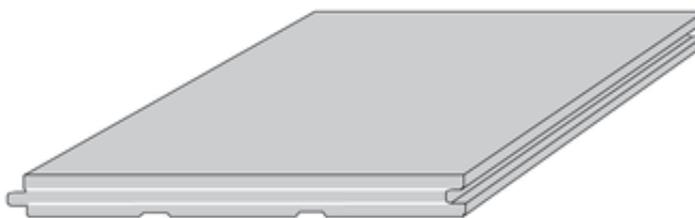
These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).



# Moso® Solid wide board

## Product

The MOSO solid wide boards have tongue and groove and consist of 3 layers solid bamboo. The middle layer is cross pressed, to maximise stability.



## Product line

Code Natural	Code Caramel	Style	Edges	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m <sup>2</sup> )
BF-LA300	BF-LA350	PP*	SE	-	1820x154x15	8	2,242
BF-LA320	BF-LA370	SP*	SE	-	1820x154x15	8	2,242
BF-LA301	BF-LA351	PP*	MB	L	1820x154x15	8	2,242
BF-LA321	BF-LA371	SP*	MB	L	1820x154x15	8	2,242
BF-DT301	BF-DT351	HD*	MB	LN	1830x142x13	6	1,559

PP = Plain pressed

SP = Side pressed

HD = High Density

SE = Sharp edged

MB = Micro bevel

L = Lacquered Bona 80 gr/m<sup>2</sup>

LN = Lacquered Bona 80 Naturale

\* = Middle layer cross pressed

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Technical characteristics

General:

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/ m<sup>3</sup>
- Fire class: EN 13501-1: Cfl-s1
- Thermal conductivity:  $\lambda = 0,17 \text{ W / (m}\cdot\text{K)}$
- Thermal resistance:  $R = 0,088 \text{ m}^2\cdot\text{K/W}$
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)

Top layer (High Density):

- Hardness: 9,5 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 3-4% (Darr-test) at 20 °C and 50-65% Rel. Air Humidity
- Density: 1050 kg/ m<sup>3</sup>



www.moso.eu

# Installation instruction MOSO® Solid wide board

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0,3%.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## The gluing

- This flooring type should be fully glued on the sub floor. It is often advised to place a chipboard or plywood to deal with possible problems in the sub floor.
- This way of installation requires specialist materials and skills. Only a recognised contractor should be used for the installation.
- Floating installation is possible, but in that case the maximum width of the floor is approx. 6 metre and the maximum length is approx. 12 metre. Expansion gaps minimal 10-15 mm
- Advised adhesive: a 2-component polyurethane. Please note that hardened adhesive can only be removed from the varnished surface using mechanical means, which may lead to damage to the protective finish.
- For porous surfaces dispersion glues (with a low water content) or synthetic resin adhesive with low solvent content can be used.
- Elastic adhesive systems like 1-component Polyurethane or silan type of adhesives only can be used, when:
  - Shear strength  $T_s > 1.4 \text{ N} / \text{mm}^2$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)
  - Shear elongation  $\gamma >= 0.5$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)Please ask your glue supplier for more information.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Finish untreated flooring

- After the glue has hardened, the floor can be sanded and filled (with a mixture of sanding dust – 100 grit- and floor filler).
- Bamboo flooring can be lacquered, oiled or waxed. For oil: note that bamboo has a dense surface structure, therefore apply oil thinly and allow to dry between applications.

## Maintenance and cleaning

- Initial maintenance: in case of a pre finished floor (lacquered or oiled), initial maintenance should be carried out after installation is complete.
- Cleaning and care: The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance.
- For further information, look at [www.woodcaredenmark.com](http://www.woodcaredenmark.com) for pre-oiled and [www.bona.com](http://www.bona.com) for pre-lacquered finishes.

## 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.

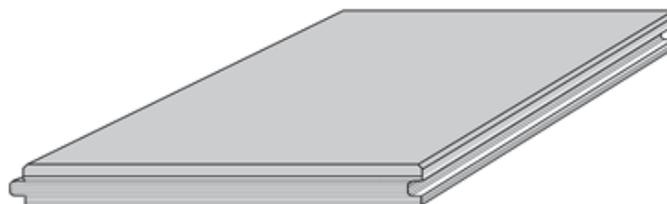
These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).



# Moso® 2-Ply wide board

## Product

The MOSO 2-Ply wide boards have tongue and groove and consist of 2 layers: a 4mm bamboo top layer and a multiplex (15mm) sub layer. With this construction, the floor board is extremely stable and with the thick top layer also very durable. The bevel (on the length side) creates a typical 'plank pattern' in the floor.



## Product line

Code	Code	Style	Edges	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m <sup>2</sup> )
Natural	Caramel						
BF-DP803	BF-DP853	PP	B	O	1900x189x19	5	1,795
BF-DP823	BF-DP873	SP	B	O	1900x189x19	5	1,795
BF-DT803	BF-DT853	HD	B	O	1900x189x19	5	1,795

PP = Plain pressed  
 SP = Side pressed  
 HD = High Density  
 O = Pre-oiled Woca Air dried (has to be re-oiled after installation)  
 B = Bevel (only on length side)

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density (bamboo): 700 kg / m<sup>3</sup>
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)

### Top layer (High Density):

- Hardness: 9,5 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 3-4% (Darr-test) at 20 °C and 50-65% Rel. Air Humidity
- Density: 1050 kg / m<sup>3</sup>



www.moso.eu

# Installation instruction MOSO® 2-Ply wide board

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0,3%.
- We recommend that you use PE damp proof membrane (min 0.2mm). The membrane must overlap by 30 cm.
- We recommend that you use a sound isolating underlay like a PE-foam.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

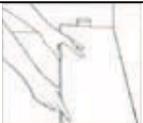
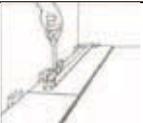
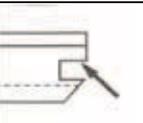
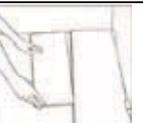
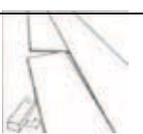
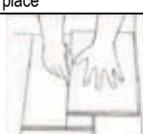
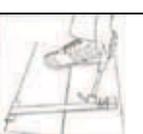
## Expansion gap

- This floor type is laid as a floating floor, see the following installation instructions. Fully glueing the boards to the subfloor is also a possible installation method, but this requires specialist materials and skills; therefore a recognised contractor should carry out the installation.
- Bamboo and wood are natural products which are affected by air humidity. Excessive air humidity causes bamboo materials to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain distance (expansion gap) from walls, door frames, pipes etc. This distance should be minimal 10-15 mm. If the floor is wider than approx. 7 metres or longer than approx. 12 metres, a larger expansion gap must be included.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Installation

1. 	2. 	3. 	4. 
Place the first board with the groove side against the wall. Insert a spacer between the end wall and board. Continue in the same way along the length of the wall. Do not apply any adhesive yet.	Lay the boards against the wall (groove side to the wall) and insert spacers to obtain the required expansion gap. Apply adhesive to the end groove. Tap the boards tightly together using a hammer and tapping block. Use a hooktool to wedge the last board into place	Gluing: All of the components should be glued with D3 glue. Apply glue to the upper surface of the groove.	Start the second row with the off-cut from the last board installed. Remember to stagger the end joints of the boards in adjacent rows by at least 50cm.
5. 	6. 	7. 	8. 
Fully glue the ends of the board and glue the side grooves. Tap boards tightly together using a hammer and tapping block. Never tap the ends of the board directly with a hammer as this will damage the board. Lay the rest of the boards in the same manner.	To measure the width of the last row of boards, place the board face down, tongue side facing the wall, on top of the last installed row. Place a spare board on top of the board to be cut, slide the spare board across until it touches the wall. Run a pencil down the edge of the spare board, thus marking the board to be cut. Remember to allow for extra space for the expansion gap.	Cut the board along the pencil line.	Tap the last board into place using a hammer and a hook tool. Insert spacers to obtain the required expansion gap.

## Maintenance and cleaning

- Initial maintenance: in case of a pre finished floor (lacquered or oiled), initial maintenance should be carried out after installation is complete.
- In case of a pre-oiled WOCA floor: this floor has to be re-oiled after installation to create a better protection.
- Cleaning and care: The useful life of your engineered boards will be considerably increased with suitable cleaning and maintenance.
- For further information, look at [www.woodcaredenmark.com](http://www.woodcaredenmark.com) for pre-oiled and [www.bona.com](http://www.bona.com) for pre-lacquered finishes.

## Skirting boards

Skirting boards must be fixed to the walls with screws and plugs in such a way as not to obstruct the natural movement of the wooden floor. If skirting boards are fixed to the wooden floor they will obstruct the floor's natural movement, and may, therefore, cause damage.

## Additional note

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

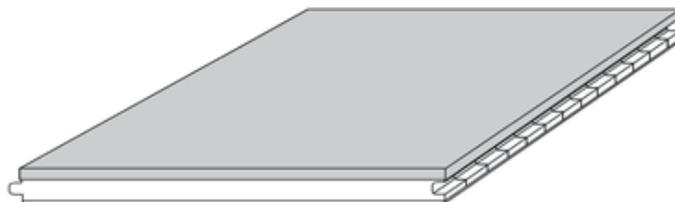
These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).



# Moso® Engineered board

## Product

The MOSO Engineered board consists of 3 layers, with a 4 mm bamboo top layer. The other layers are made of pine, the middle layer being cross pressed to maximise stability. The boards are connected by means of a tongue and groove.



## Product line

Code Natural	Code Caramel	Style	Edges	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m <sup>2</sup> )
BF-SW300	BF-SW350	PP	SE	L	2200x190x15	8	3,344
BF-SW400	BF-SW450	SP	SE	L	2200x190x15	8	3,344
BF-SW301	BF-SW351	PP	SE	O	2200x190x15	8	3,344
BF-SW401	BF-SW451	SP	SE	O	2200x190x15	8	3,344

PP = Plain pressed  
 SP = Side pressed  
 SE = Sharp edge  
 L = Lacquered Bona 80 gr/m<sup>2</sup>  
 O = Pre-oiled Woca Air dried (has to be re-oiled after installation)

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density (bamboo): 700 kg / m<sup>3</sup>
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)



www.moso.eu

# Installation instruction MOSO® Engineered board

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.
- We recommend that you use PE damp proof membrane (min 0.2mm). The membrane must overlap by 30 cm.
- We recommend that you use a sound isolating underlay like a PE-foam.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

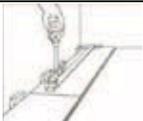
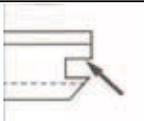
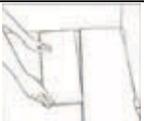
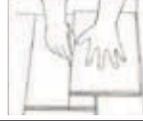
## Expansion gap

- This floor type is laid as a floating floor, see the following installation instructions. Fully glueing the boards to the subfloor is also a possible installation method, but this requires specialist materials and skills; therefore a recognised contractor should carry out the installation.
- Bamboo and wood are natural products which are affected by air humidity. Excessive air humidity causes bamboo materials to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain distance (expansion gap) from walls, door frames, pipes etc. This distance should be minimal 10-15 mm. If the floor is wider than approx. 7 metres or longer than approx. 12 metres, a larger expansion gap must be included.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Installation

			
<p>Place the first board with the groove side against the wall. Insert a spacer between the end wall and board. Continue in the same way along the length of the wall. Do not apply any adhesive yet.</p>	<p>Lay the boards against the wall (groove side to the wall) and insert spacers to obtain the required expansion gap. Apply adhesive to the end groove. Tap the boards tightly together using a hammer and tapping block. Use a hooktool to wedge the last board into place</p>	<p>Gluing: All of the components should be glued with D3 glue. Apply glue to the upper surface of the groove.</p>	<p>Start the second row with the off-cut from the last board installed. Remember to stagger the end joints of the boards in adjacent rows by at least 50cm.</p>
			
<p>Fully glue the ends of the board and glue the side grooves. Tap boards tightly together using a hammer and tapping block. Never tap the ends of the board directly with a hammer as this will damage the board. Lay the rest of the boards in the same manner.</p>	<p>To measure the width of the last row of boards, place the board face down, tongue side facing the wall, on top of the last installed row. Place a spare board on top of the board to be cut, slide the spare board across until it touches the wall. Run a pencil down the edge of the spare board, thus marking the board to be cut. Remember to allow for extra space for the expansion gap.</p>	<p>Cut the board along the pencil line.</p>	<p>Tap the last board into place using a hammer and a hook tool. Insert spacers to obtain the required expansion gap.</p>

## Maintenance and cleaning

- Initial maintenance: in case of a pre finished floor (lacquered or oiled), initial maintenance should be carried out after installation is complete.
- In case of a pre-oiled WOCA floor: this floor has to be re-oiled after installation to create a better protection.
- Cleaning and care: The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance.
- For further information, look at [www.woodcaredenmark.com](http://www.woodcaredenmark.com) for pre-oiled and [www.bona.com](http://www.bona.com) for pre-lacquered finishes.

## Skirting boards

Skirting boards must be fixed to the walls with screws and plugs in such a way as not to obstruct the natural movement of the wooden floor. If skirting boards are fixed to the wooden floor they will obstruct the floor's natural movement, and may, therefore, cause damage.

## Additional note

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

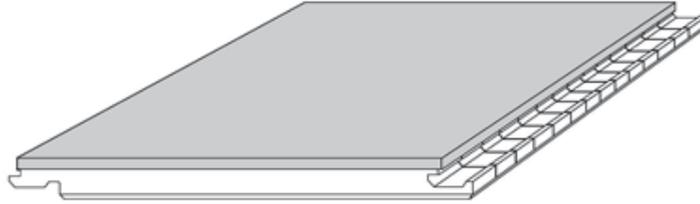
These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).



# Moso® Engineered board with Click system

## Product

The MOSO Engineered board with click system consists of 3 layers, with a 4 mm bamboo top layer. The other layers are made of pine, the middle layer being cross pressed to maximise stability. The boards are connected by means of the click system: the boards are machined in such a way that a fixed connection can be made without using glue.



## Product line

Code	Code	Style	Edges	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m²)
Natural	Caramel						
BF-SW320	BF-SW370	PP	SE	L	2200x190x15	8	3,344
BF-SW420	BF-SW470	SP	SE	L	2200x190x15	8	3,344
BF-SW321	BF-SW371	PP	SE	O	2200x190x15	8	3,344
BF-SW421	BF-SW471	SP	SE	O	2200x190x15	8	3,344

### Stained:

Code	Code	Style	Edges	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m²)
White	Black						
BF-SW420WH	BF-SW470BL	SP	SE	L	2200x190x15	8	3,344

PP = Plain pressed

SP = Side pressed

SE = Sharp edge

L = Lacquered Bona 80 gr/m2

O = Pre-oiled Woca Air dried (has to be re-oiled after installation)

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density (bamboo): 700 kg / m<sup>3</sup>
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)



www.moso.eu

# Installation instruction MOSO® Engineered board LOC

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.
- We recommend that you use PE damp proof membrane (min 0.2mm). The membrane must overlap by 30 cm.
- We recommend that you use a sound isolating underlay like a PE-foam.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

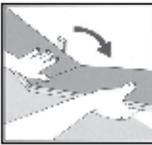
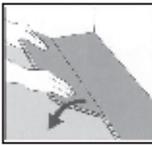
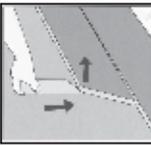
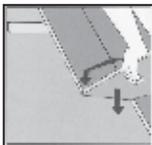
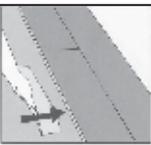
- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## Expansion gap

- This floor type is laid as a floating floor, see the following installation instructions. Fully glueing the boards to the subfloor is also a possible installation method, but this requires specialist materials and skills; therefore a recognised contractor should carry out the installation.
- Bamboo and wood are natural products which are affected by air humidity. Excessive air humidity causes bamboo materials to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain distance (expansion gap) from walls, door frames, pipes etc. This distance should be minimal 10-15 mm. If the floor is wider than approx. 7 metres or longer than approx. 12 metres, a larger expansion gap must be included.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

1. Installation	2.	3.	4.	5.	6.
					
Place the first board, in the left side of the room, with the tongue side against the wall.	Connect the next board on the head-side: insert the tongue under a 45 degree angle and press it to the floor. Continue to install the rest of the row in the same manner.	Start the second row with the off-cut from the last board installed. Remember to stagger the end joints of the boards in adjacent rows by at least 50cm.	Put an installation wedge under the short end of the last board installed.	Connect the next board on the head-side: insert the tongue under a 45 degree angle and press it down, at the same time inserting the tongue on the length side of the board.	Carefully tap the boards together using a hammer and tapping block. Remove the installation wedge and gently push the boards down to the floor. Continue to install the rest of the floor in the same manner.

## Maintenance and cleaning

- Initial maintenance: in case of a pre finished floor (lacquered or oiled), initial maintenance should be carried out after installation is complete.
- In case of a pre-oiled WOCA floor: this floor has to be re-oiled after installation to create a better protection.
- Cleaning and care: The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance.
- For further information, look at [www.woodcaredenmark.com](http://www.woodcaredenmark.com) for pre-oiled and [www.bona.com](http://www.bona.com) for pre-lacquered finishes.

## Skirting boards

Skirting boards must be fixed to the walls with screws and plugs in such a way as not to obstruct the natural movement of the wooden floor. If skirting boards are fixed to the wooden floor they will obstruct the floor's natural movement, and may, therefore, cause damage.

## Additional note

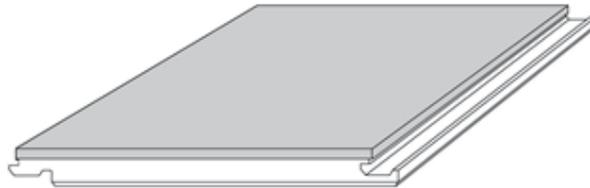
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These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).

# Engineered board TOPBAMBOO™

## Product

The engineered board TOPBAMBOO consists of a 2,5mm solid bamboo, pressed onto a HDF core, with a soft wood backer. Because of this construction, the material is very stable. The UNI-CLIC system, supplied with paraffin, makes it very easy to install.



## Product line

Code Natural	Code Caramel	Style	Edge	Finish	Dimensions (mm)	Box Cont. (Pcs.)	Box Cont. (m <sup>2</sup> )
	<b>BF-SW1051B-L01</b>	PP	MB	BL01	960x128x10	12	1,475
	<b>BF-SW1151-L01</b>	SP	MB	L01	960x128x10	12	1,475
	<b>BF-SW1151B-L02</b>	SP	MB	BL02	960x128x10	12	1,475
	<b>BF-SW1151B-L06</b>	SP	MB	BL06	960x128x10	12	1,475
<b>BF-SW1210-L01</b>	<b>BF-SW1260-L01</b>	HD	MB	L01	920x125x10	12	1,380
	<b>BF-SW1260B-L01</b>	HD	MB	BL01*	920x125x10	12	1,380
PP = plain pressed							
SP = side pressed							
HD = High Density							
MB = micro bevel							
L01 = lacquered Treffert 80gr/m <sup>2</sup>							
BL01= brushed lacquered Treffert 80gr/m <sup>2</sup>							
BL02= brushed lacquered Treffert 80gr/m <sup>2</sup> stained WHITE							
BL06= brushed lacquered Treffert 80gr/m <sup>2</sup> stained COLONIAL							

\*) Due to the characteristics of the High Density bamboo, the 'depth' of the brushing will be different from one board to another. This creates a very natural effect.

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See "MOSO flooring and floor heating".

## Technical characteristics

- Hardness: 3-4 kg / mm<sup>2</sup> (Brinell); Density version: 9,5 kg/mm<sup>2</sup>
- Shrink/swell (bamboo): 0,14% per 1% change in moisture content
- Equilibrium MC (bamboo): 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density (bamboo): 700 kg/ m<sup>3</sup>; Density version: 1050 kg/m<sup>3</sup>
- Density (HDF): 890 kg/ m<sup>3</sup>
- Fire resistance: UNE 11925-2: Cfl-s1
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)
- Slip resistance: EN 1339:2003: USRV 31  
(brushed surface: USRV 38)



# Installation instruction Engineered board TOPBAMBOO



## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.
- We recommend that you use PE damp proof membrane (min 0.2mm). The membrane must overlap by 30 cm.
- We recommend that you use a sound isolating underlay like a PE-foam.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

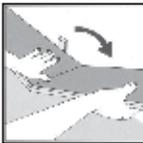
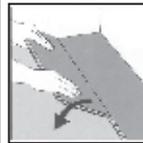
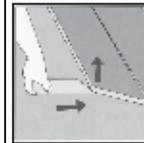
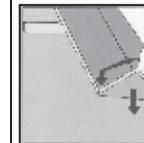
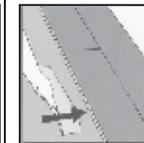
## Expansion gap

- This floor type is laid as a floating floor, see the following installation instructions. Fully glueing the boards to the subfloor is also a possible installation method, but this requires specialist materials and skills; therefore a recognised contractor should carry out the installation.
- Bamboo and wood are natural products which are affected by air humidity. Excessive air humidity causes bamboo materials to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain distance (expansion gap) from walls, door frames, pipes etc. This distance should be minimal 10-15 mm. If the floor is wider than approx. 7 metres or longer than approx. 12 metres, a larger expansion gap must be included.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. Please check the conditions elsewhere in this document.

## Installation

					
Place the first board, in the left side of the room, with the tongue side against the wall.	Connect the next board on the head-side: insert the tongue under a 45 degree angle and press it to the floor. Continue to install the rest of the row in the same manner.	Start the second row with the off-cut from the last board installed.	Put an installation wedge under the short end of the last board installed.	Connect the next board on the head-side: insert the tongue under a 45 degree angle and press it down, at the same time inserting the tongue on the length side of the board.	Carefully tap the boards together using a hammer and tapping block. Remove the installation wedge and gently push the boards down to the floor. Continue to install the rest of the floor in the same manner.

## Maintenance and cleaning

Cleaning and care: The useful life of your engineered boards will be considerably increased with suitable cleaning and maintenance. Ask your supplier which products are suitable.

## Skirting boards

Skirting boards must be fixed to the walls with screws and plugs in such a way as not to obstruct the natural movement of the wooden floor. If skirting boards are fixed to the wooden floor they will obstruct the floor's natural movement, and may, therefore, cause damage.

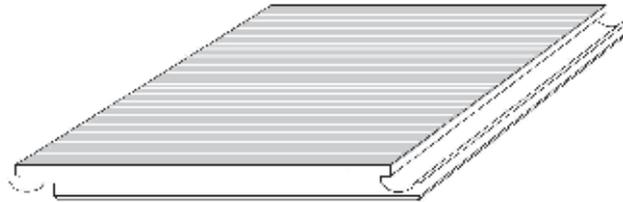
## Additional note

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

## Veneer flooring industrial style

### Product

Veneer flooring consists of a 0,6mm MOSO bamboo veneer, pressed onto a HDF core, with a soft wood backer. The veneer is pressed cross wise, to create an 'industrial flooring' look. The UNI-CLIC system makes it very easy to install—without using glue.



### Product line

Code Natural	Code Caramel	Style	Edge	Finish	Dimensions (mm)	Box content (Pcs)	Box content (m <sup>2</sup> )
BF-FRPR1000	BF-FRPR1050	VL	SE	L	1203x190x8,2	10	2,286
VL = Vertical, industrial look							
SE = Scharp edge							
L = Lacquered							

### Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

### Technical characteristics

– Domestic usage classification:	EN685: 23
– Commercial usage classification:	EN685: 31
– Resistance to indentation:	EN 1534: $\geq 30$ N/mm <sup>2</sup>
– Resistance to abrasion:	EN 14354: >5000 revolutions
– Thickness distention:	EN 13329 annex G: $\leq 8$
– Density:	950 kg / m <sup>3</sup>
– Fire reaction and smoke generation:	EN 13501: Bfl s1
– Emission Formaldehyde:	<0,124 mg/m <sup>3</sup> (E1-norm)
– Slip resistance:	EN 1339:2003: USRV >15
– Thermal conductivity:	$\lambda = 0,203$ W / (m·K)
– Thermal resistance:	R = 0,0493 m <sup>2</sup> ·K/W



www.moso.eu

# Installation instruction Veneer Flooring

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.
- We recommend that you use PE damp proof membrane (min 0.2mm). The membrane must overlap by 30 cm.
- We recommend that you use a sound isolating underlay like a PE-foam.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

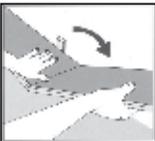
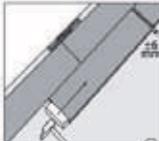
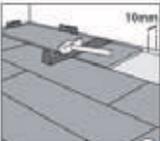
## Expansion gap

- This floor type is laid as a floating floor, see the following installation instructions. Fully glueing the boards to the subfloor is also a possible installation method, but this requires specialist materials and skills; therefore a recognised contractor should carry out the installation.
- Bamboo and wood are natural products which are affected by air humidity. Excessive air humidity causes bamboo materials to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain distance (expansion gap) from walls, door frames, pipes etc. This distance should be minimal 10-15 mm. If the floor is wider than approx. 10 metres or longer than approx. 12 metres, a larger expansion gap must be included.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. Please check the conditions elsewhere in this document.

## Installation

<p>1.</p> 	<p>2.</p> 	<p>3.</p> 	<p>4.</p> 
<p>Place the first board, in the left side of the room, with the tongue side against the wall.</p>	<p>Connect the next board on the headside: insert the tongue under a 45 degree angle and press it to the floor. Continue to install the rest of the row in the same manner.</p>	<p>Start the second row with the off-cut from the last board installed. Connect it with the first row by clicking it in the length side groove. Place the next board approx 6mm from the first board and use a hammer and tapping block to carefully close the boards on the headside.</p>	<p>Continue in this manner until the last row. Remember to leave the above mentioned expansion gap between the floor and the wall.</p>

## Maintenance and cleaning

Cleaning and care: The useful life of your engineered boards will be considerably increased with suitable cleaning and maintenance. Ask your supplier which products are suitable.

## Skirting boards

Skirting boards must be fixed to the walls with screws and plugs in such a way as not to obstruct the natural movement of the wooden floor. If skirting boards are fixed to the wooden floor they will obstruct the floor's natural movement, and may, therefore, cause damage.

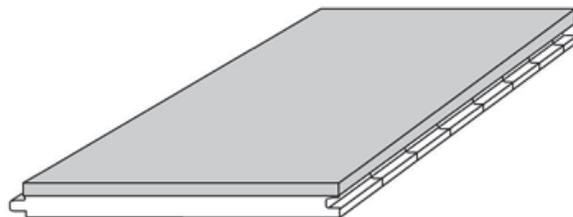
## Additional note

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

# Moso® 2-Ply flooring

## Product

MOSO 2-Ply flooring consists of a 4 mm top layer and a cross pressed (bamboo) backing. The boards are connected by means of a tongue and groove.



## Product line

Code Natural	Code Caramel	Style	Edges	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m <sup>2</sup> )
BF-LA401	BF-LA451	PP	SE	-	920x92x10	36	3,047
BF-LA421	BF-LA471	SP	SE	-	920x92x10	36	3,047
BF-LA403	BF-LA453	PP	SE	O	920x92x10	36	3,047
BF-LA423	BF-LA473	SP	SE	O	920x92x10	36	3,047
BF-LA409	BF-LA459	PP	SE	L	920x92x10	36	3,047
BF-LA429	BF-LA479	SP	SE	L	920x92x10	36	3,047
BF-DT409	BF-DT459	HD	SE**	LN	920x92x10	24	2,031
BF-LA411	BF-LA461	PP	SE	-	450x75x10*	80	2,7
BF-LA431	BF-LA481	SP	SE	-	450x75x10*	80	2,7
BF-LA413	BF-LA463	PP	SE	O	450x75x10*	80	2,7
BF-LA433	BF-LA483	SP	SE	O	450x75x10*	80	2,7
BF-LA419	BF-LA469	PP	SE	L	450x75x10*	80	2,7
BF-LA439	BF-LA489	SP	SE	L	450x75x10*	80	2,7

PP = Plain pressed

SP = Side pressed

HD = High Density

SE = Sharp edge

L = Lacquered Bona 125 gr/m<sup>2</sup>

LN = Lacquered Bona Naturale

O = Pre-oiled Woca Air dried (has to be re-oiled after installation)

\*) With left and right tongue it is suitable to create a herringbone pattern and a block pattern (50% with left tongue and 50% with right tongue).

\*\*) Equipped with "mini bevel", approx. 0.1mm (barely visible).

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See "MOSO flooring and floor heating".

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/ m<sup>3</sup>
- Fire class: EN 13501-1: Cfl-s1
- Thermal conductivity:  $\lambda = 0,17 \text{ W / (m·K)}$
- Thermal resistance:  $R = 0,058 \text{ m}^2\cdot\text{K/W}$
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)

High Density version (top layer):

- Hardness: 9,5 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content



www.moso.eu

# Installation instruction MOSO® 2-Ply flooring

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## The gluing

- This flooring type should be fully glued on the sub floor. It can be glued directly on the screed (like sand cement or anhydrite) if it is level, without cracks, dry, clean and stable.
- This way of installation requires specialist materials and skills. Only a recognised contractor should be used for the installation.
- Advised adhesive: a 2-component polyurethane. Please note that hardened adhesive can only be removed from the varnished surface using mechanical means, which may lead to damage to the protective finish.
- For porous surfaces dispersion glues (with a low water content) or synthetic resin adhesive with low solvent content can be used.
- Elastic adhesive systems like 1-component Polyurethane or silan type of adhesives only can be used, when:
  - Shear strength  $T_s > 1.4 \text{ N / mm}^2$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)
  - Shear elongation  $\gamma >= 0.5$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)Please ask your glue supplier for more information.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Finish untreated flooring

- After the glue has hardened, the floor can be sanded and filled (with a mixture of sanding dust – 100 grit- and floor filler).
- Bamboo flooring can be lacquered, oiled or waxed. For oil: note that bamboo has a dense surface structure, therefore apply oil thinly and allow to dry between applications.

## Maintenance and cleaning

- Initial maintenance: in case of a pre finished floor (lacquered or oiled), initial maintenance should be carried out after installation is complete.
- In case of a pre-oiled WOCA floor: this floor has to be re-oiled after installation to create a better protection.
- Cleaning and care: The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance.
- For further information, look at [www.woodcaredenmark.com](http://www.woodcaredenmark.com) for pre-oiled and [www.bona.com](http://www.bona.com) for pre-lacquered finishes.

## 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.

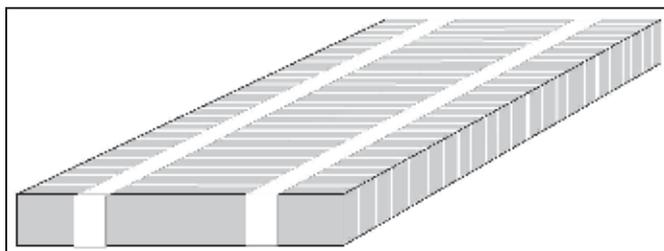
These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).



# Moso® Industrial flooring

## Product

The MOSO industrial floor consists of short bamboo strips, which are bundled into a block form with tape. After sanding off this tape, the floor is filled and finished. This floor type is especially suitable to be glued directly onto the sub floor.



## Product line

Code	Code	Code	Style	Edges	Finish	Dimensions (mm)	Box Cont. (Pcs.)	Box Cont. (m <sup>2</sup> )
Natural	Caramel	Thermo						
BF-PR300	BF-PR350		VL	SE	-	280x140x10	96	3,763
BF-PR100	BF-PR150		VL	SE	-	280x140x15	60	2,352
BF-PR1000	BF-PR1050	BF-PR1060	HD	SE	-	300x200x10	32	1,920

VL = Vertical

DT = High Density

SE = Sharp edge

## Installation

Please read the full installation instructions on the backside.

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)  
*High Density version: 9,5 kg/mm<sup>2</sup> (Brinell)*
- Shrink/swell: 0,14% per 1% change in moisture content  
*Thermo: 0,08% per 1% change in moisture content*
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity  
*Thermo: 3-4% (20 °C and 50-65% Rel. Air Humidity)*
- Density: 700 kg/ m<sup>3</sup>; *Density: 1050 kg/m<sup>3</sup>*
- Fire class: EN 13501-1: Cfl-s1
- Thermal conductivity:  $\lambda = 0,17 \text{ W / (m}\cdot\text{K)}$
- Thermal resistance: R = 0,116 m<sup>2</sup>·K/W (20mm Thickness);  
R = 0,088 m<sup>2</sup>·K/W (15mm Thickness);  
R = 0,058 m<sup>2</sup>·K/W (10mm thickness)



www.moso.eu

# Installation instruction MOSO® Industrial flooring

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface. Take care when working with adhesive tape as this could damage the flooring finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## The gluing

- The backside of each element is marked with a pencil.
- The bamboo strips can be slightly curved which can lead to small gaps between the strips. This is normal for bamboo industrial flooring.
- This flooring type should be fully glued on the sub floor. It can be glued directly on the screed (like sand cement or anhydrite) if it is level, without cracks, dry, clean and stable.
- This way of installation requires specialist materials and skills. Only a recognised contractor should be used for the installation.
- Advised adhesive: a 2-component polyurethane. Please note that hardened adhesive can only be removed from the varnished surface using mechanical means, which may lead to damage to the protective finish.
- For porous surfaces dispersion glues (with a low water content) or synthetic resin adhesive with low solvent content can be used.
- Elastic adhesive systems like 1-component Polyurethane or silan type of adhesives only can be used, when:
  - Shear strength  $T_s > 1.4 \text{ N / mm}^2$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)
  - Shear elongation  $\gamma >= 0.5$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)Please ask your glue supplier for more information.

## Floor heating

This floor type can be installed – under certain conditions – on warm water floor heating. See “MOSO flooring and floor heating”.

## Finish untreated flooring

- After the glue has hardened, the floor can be sanded and filled (with a mixture of sanding dust – 100 grit- and floor filler).
- Bamboo flooring can be lacquered, oiled or waxed. For oil: note that bamboo has a dense surface structure, therefore apply oil thinly and allow to dry between applications.

## Maintenance and cleaning

The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance. Ask your supplier which products are suitable.

## 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.

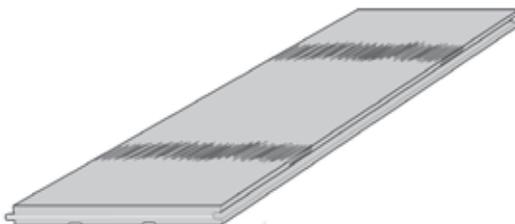
These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).



# Moso® FOREST floor

## Product

MOSO brings the bamboo forest to your floor: instead of cutting the bamboo pole into strips and pressing them together into a floor board, now the 'complete' bamboo trunk is used. The wall of the trunk is flattened with a special process and it serves as the top layer of a 3ply floor board. The result is a very robust board with the natural beauty of the bamboo plant. The rings on the trunk are visible in the shape of nodes (on the full width of the board) and even the markings which have been made by the farmers can be seen in some boards. The surface of the flooring consists of the stony bark of the bamboo stem, which is so hard that no oil or lacquer finish is required.



## Product line

Code	Style	Edge	Finish	Dimensions (mm)	Box Content (Pcs.)	Box Content (m <sup>2</sup> )
BF-FBS400	Node on full width	MB	-	1210x125x18	10	1,513
MB = micro bevel						

## Installation

Please read the full installation instructions on the backside.

*This floor type can not be installed on floor heating.*

## Technical characteristics

- Configuration: 3 ply; toplayer approx. 5mm
- Hardness: 10,5 kg / mm<sup>2</sup> (Brinell)
- Shrink/swell : 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 850 kg/ m<sup>3</sup>
- Emission formaldehyde: <0,025 mg/m<sup>3</sup> (E0 norm)
- Fire class: EN 13501-1: Cfl-s1



www.moso.eu

# Installation instruction MOSO® FOREST

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.

## Please note

- Bamboo is a very natural product! Color differences, height differences, small cracks in the surface and gaps between the boards are normal for this product.
- You should always mix the components from different boxes.
- Before installation, we advise you to inspect the flooring for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the flooring surface.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- To protect against dust and sand, a walk-off mat has to be placed before and after the entrance of the room.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## The gluing

- This flooring type should be fully glued on the sub floor. It can be glued directly on the screed (like sand cement or anhydrite) if it is level, without cracks, dry, clean and stable. It is often advised to place a chipboard or plywood to deal with possible problems in the sub floor.
- This way of installation requires specialist materials and skills. Only a recognised contractor should be used for the installation.
- Floating installation is possible, but in that case the maximum width of the floor is approx. 5 metre and the maximum length is approx. 12 metre.
- Advised adhesive: a 2-component polyurethane..
- For porous surfaces dispersion glues (with a low water content) or synthetic resin adhesive with low solvent content can be used.
- Elastic adhesive systems like 1-component Polyurethane or silan type of adhesives only can be used, when:
  - Shear strength  $T_s > 1.4 \text{ N} / \text{mm}^2$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)
  - Shear elongation  $\gamma >= 0.5$  (3 days balanced at 23 degrees Celsius / 50% Air Humidity)Please ask your glue supplier for more information.

## Floor heating

This floor type can not be installed on floor heating.

## Finish

The surface of the MOSO FOREST is the bark/skin of the bamboo pole and is very hard and dense. To protect it (and especially to close the gaps at the bevel) a floor wax can be applied.

## Maintenance and cleaning

Cleaning and care: The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance. Use limited amounts of water (moist mop) and neutral detergents.

## 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).



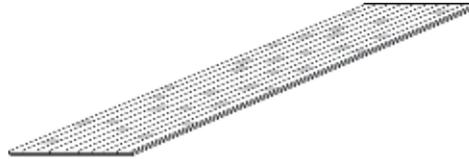


# Moso<sup>®</sup> Unibamboo<sup>™</sup>

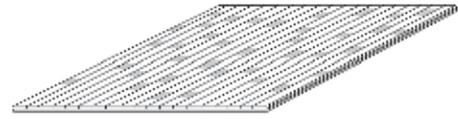
(Patent Nr. NL 2000349)

## Product

Unibamboo is a flexible floor covering, consisting of a bamboo top layer pressed on a felt latex backing. The toplayer consists of solid bamboo strips (width 15mm), showing clearly the bamboo 'nodes'. All Unibamboo boards are finished with a special, very matt, finish (Bona<sup>®</sup> Naturale).



UNIBAMBOO<sup>™</sup> Board



UNIBAMBOO<sup>™</sup> Tile

## Product line

Code Natural	Code Caramel	Edges	Finish	Dimensions (mm)	Box Content (Pcs)	Box Content (m <sup>2</sup> )
FPNLD18-90-**	FPCLD18-90-**	MB4	L / SL	900x180x3	15	2,430
TPNLD15-50-**	TPCLD15-50-**	MB2	L / SL	500x500x3	12	3,000
		MB2 = Micro bevel on 2 sides (length)				
		MB4 = Micro bevel on 4 sides				
		L = Lacquered Bona Naturale 110 gr/m <sup>2</sup>				
		SL = Stained/Lacquered Bona Naturale 110 gr/m <sup>2</sup>				

\*\* ) The last 2 positions of the product code represent the finish:  
Transparent lacquer (91), White (92), Black (93), Mahogany (94), Taupe (95), Colonial (96)

## Installation

Please read the full installation instructions on the backside.  
*This floor type can not be installed on floor heating.*

## Technical characteristics

Bamboo:

- Hardness: approx. 4 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Density: 700 kg/ m<sup>3</sup>
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity

Latex felt:

- Density: 780 gr./m<sup>2</sup>
- Thickness: approx. 1mm

Bamboo+latex combined:

- Hardness: approx. 2,8 kg/mm<sup>2</sup> (Brinell)
- Fire class: EN 13501-1: Dfl-s1
- Formaldehyde emission: < 0,124 mg/m<sup>3</sup> (E1 Norm)

Lacquer: BONA NATURALE:

- Abrasion: SS-EN 13696 (12/16): 4500 Revs  
DIN EN438:2 (S-42): 125 rev
- Adhesion: Coin test: approved  
SS-EN 14354 (cross-cut) GT 0/5b
- Gloss ASTM D523: 6,9-9,2 deg

## Patent details

- Dutch Patent nr.: 2000349
- PCT request: B27J 1/100 (2006.01) /E04F 13/10 (2006.01) Filing date  
03.12.07



www.moso.eu

# Installation instruction UNIBAMBOO

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible. Although the material has been colour graded, you should always mix the boards from different packs! Make sure you have boxes with the same colour grade (all boxes should have the same colour label: L or M or D).
- Before installation, we advise you to inspect the boards for damage and other irregularities. We cannot accept any complaints regarding this once the boards have been installed.
- Installation of the boards should always be the final job in any building project, in order to avoid damaging the surface. Take care when working with adhesive tape as this could damage the finish.
- Avoid the boards dropping: especially the corners are very vulnerable for dents (however if this should happen, you can easily cut off this part).
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- In case a board or strip is damaged, it can easily be replaced (for this reason it is advisable to always keep some spare boards available). Use a sharp knife to cut the board (strip) from the floor (be sure to remove the latex as well). Clean the sub floor and glue the new board (strip) in place.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## Installation

### UNIBAMBOO BOARDS

- This flooring type should be fully glued on the sub floor. See list 'recommended glues'. ATTENTION: don't apply more than 250-500 gr/m<sup>2</sup>!
- Bamboo and wood are natural products which are affected by air humidity. High air humidity causes bamboo material to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain the edge distance (expansion gap) from walls, door frames, pipes etc.! This distance should be 5 - 10 mm.
- First determine in which direction you will place the boards. It is advised to install the boards parallel to the main light source.
- For the first row, place a line, at a distance of the width of 3 boards + expansion space from the wall, parallel to the installation direction. The first row has to be placed exactly at this line, so it is recommended to place a slat or beam on the floor – so the boards can be put against this. See drawing below.
- Apply the glue, according to the instructions of the manufacturer, and install the first 2 rows. Install each board as follows: first put one corner in the correct position and then press the rest of the board in the glue.
- If you used a beam/slat to align the first rows, remove it now.
- Now install the rest of the boards. For the last row: cut the boards to size, leaving 5 to 10 mm space to the wall. To cut between the bamboo strips (=length direction of board) a sharp knife can be used. To cut through the bamboo, (for example for cutting the board to a certain length) use a jigsaw with a fine blade.
- For some glue types it is advisable to roll the floor with a special roller, 30-60 minutes after installing. Please consult your glue supplier.

### UNIBAMBOO TILES

- This flooring type should be fully glued on the sub floor. See list 'recommended glues'. ATTENTION: don't apply more than 250-500 gr/m<sup>2</sup>!
- Bamboo and wood are natural products which are affected by air humidity. Excessive air humidity causes bamboo material to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain the edge distance (expansion gap) from walls, door frames, pipes etc.! This distance should be 5 - 10 mm.
- Determine the middle of the room by drawing a line on the floor, both in length and width, in the middle, at right angles to the wall. This is the starting point for the installation.
- Place (without glue) along these 2 lines a 'test' row. When, at the walls, only a small distance is left, the material can be shifted somewhat, to get a better distribution.
- Apply the glue, according to the instructions of the manufacturer, and install the first 2 rows. Install each tile as follows: first put one corner of the tile in the correct position and then press the rest of the tile in the glue.
- A bamboo strip (one or more) can be placed in between the tiles. Especially when another colour is used, one can create a very playful effect.
- Now install the rest of the tiles. For the last row: cut the tiles to size, leaving 5 to 10 mm space to the wall. To cut between the bamboo strips, a sharp knife can be used. Use a scissors or saw with a fine blade to cut the bamboo strips.

## Floor heating

This floor type can not be installed on floor heating.

## Maintenance and cleaning

- The useful life of your floor will be considerably increased with suitable cleaning and maintenance.
- Sand and dust have the same effect on the surface as sanding paper. Therefore, use a soft brush, vacuum cleaner or special dust remover to keep sand and dust from the floor. At the entrance, use a good quality entrance mat.
- Frequent cleaning: use dry methods e.g. vacuum cleaning and dry mopping.
- Occasional cleaning to remove more difficult dirt: use Bona® Parquet cleaner or Bona® Wood floor cleaner ([www.bona.com](http://www.bona.com)).

## 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 supplier.

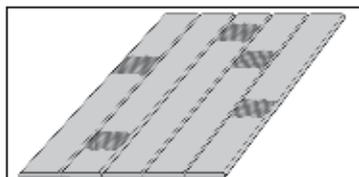
These instructions are subject to change. For the latest version go to [www.unibamboo.eu](http://www.unibamboo.eu).



# Moso® Flooring-on-a-roll

## Product

MOSO Flooring-on-a-Roll is supplied on rolls of 4500x200cm. In this case the bamboo strips have not been pressed together, but have been connected in an alternative, flexible way. The strips have been connected by means of tape on the back side. The rolls are supplied with a latex backing



## Product line

Code Natural	Code Caramel	Style	Strip size (mm)	Finish	Backing	Roll Dimensions (m)*
MPNL3.5-200-**	MPCL3.5-200-**	Panda	2x3.5	- / L / SL	Latex	2x45
MPNL7-200-**	MPCL7-200-**	Panda	2x7	- / L / SL	Latex	2x45
MPNL17-200-**	MPCL17-200-**	Panda	2x17	- / L / SL	Latex	2x45

L = Lacquered  
SL = Stained lacquer

\*) Alternative widths: 140cm or 160 cm. The length of the rolls are approximately 45 and 22m (no fixed length).

\*\*) The last 2 positions of the product code represent the finish:

21=unfinished, 22=lacquered. In addition, the following colours are available:

01=White, 11=Black, 12=Elephant, 25=Mahogany, 40=Blue, 60=Taupe, 65=Blossom, 70=Colonial, 75=Chestnut

## Installation

Please read the full installation instructions on the backside.

*This floor type can not be installed on floor heating.*

## Technical characteristics

- Latex: Density: 400 gr./m<sup>2</sup>, Thickness 2mm
- Bamboo: Hardness: 4 kg/mm<sup>2</sup> (Brinell)
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity
- 8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/ m<sup>3</sup>
- Thermal conductivity:  $\lambda = 0,17 \text{ W / (m}\cdot\text{K)}$



www.moso.eu

# Installation instruction MOSO® Flooring-on-a-roll (with latex backing)

## Before installation

- To allow acclimatisation, lay your bamboo flooring flat in the room in which it is to be installed for at least 48 hours, in its sealed foil packaging or box, at a room temperature of 18°-20°C (50-65% air humidity).
- Please note that the surface to which the flooring is to be applied must have a minimum temperature of 18°C. The flooring may be installed on any sub floor which is level, without cracks, dry, clean and stable.
- Excessive humidity has a detrimental effect on the flooring. Maximum permitted humidity levels for sub floors are: sand cement 1,8%, chipboard 7-9%, anhydrite floors 0.3%.

## Please note

- Bamboo is a natural product! Therefore variations in colour and structure within a batch are possible.
- Before installation, we advise you to inspect the material for moisture content, size, colour differences and damage. We cannot accept any complaints regarding this once the material has been installed or further processed.
- Installation of the flooring should always be the final job in any building project, in order to avoid damaging the surface. Take care when working with adhesive tape as this could damage the (oil/lacquer) finish.
- Felt pads must be attached to furniture and chairs to avoid damage to the flooring surface.
- All lacquered or stained material should get a first maintenance treatment immediately after installation. Ask your supplier for details.

## Ideal room conditions

- Room temperature approx. 18-20°C; Air humidity 50 - 65%.
- During the winter months, room air can become extremely dry. To maintain a constant air humidity, ceramic humidifiers should be mounted on radiators (or stoves) and, for larger rooms, electric air humidifiers are required. In summer and autumn when air humidity is high, ensure that the room is well-ventilated. Where these conditions are not maintained, warping, shrinkage and movement will occur. Check the air humidity using a hygrometer.

## Installation

- This flooring type should be fully glued on the sub floor. To glue the boards on the floor, use adhesive suitable for PVC or latex. See list 'recommended glues'.
- Bamboo and wood are natural products which are affected by air humidity. Excessive air humidity causes bamboo material to swell whilst low air humidity results in shrinking. It is of the utmost importance that you maintain the edge distance (expansion gap) from walls, door frames, pipes etc.! This distance should be approx. 5 - 10 mm.
- Apply the glue on the sub floor, according to instructions of the supplier, and put the material in the correct position. Press well into the glue to ensure a good adhesion.
- To improve the connection of the head sides, a bamboo strip (one or more) can be placed in between the rolls. Especially when another colour is used, one can create a very playful effect.
- Measure the width of the last roll and cut this to the required size. To cut between the bamboo strips, a sharp knife can be used. Use a scissors or saw with a fine blade to cut the bamboo strips.

## Floor heating

This floor type can not be installed on floor heating.

## Finish

- This floor type can be either lacquered, oiled, or waxed. For oil: note that bamboo has a dense surface structure, therefore apply oil thinly and allow to dry between applications
- The prefinished bamboo flooring is finished with a transparent- or coloured lacquer. This is a water based acrylate lacquer and satisfies the most recent environmental requirements.
- In case the material is placed in a 'heavy traffic' area, or in a place with a lot of humidity (for example bath rooms), it is recommended to apply an extra layer of lacquer with the Bamboo-flex finish or the Bamboo-flex colour. When using other types of lacquer, MOSO can not be held responsible for the result.
- Remove glue residues and other materials from the surface of the installed floor. Clean the floor, using a brush or vacuum cleaner.
- Sand the surface, using sanding grid 230. Clean the surface with a damp cloth.
- Use a roller or a flat brush with soft hairs to apply the lacquer. Follow the instructions from the supplier of the lacquer. If needed, apply another layer of lacquer.

## Maintenance and cleaning

- Sand and dust have the same effect on the surface as sanding paper. Therefore, use a soft brush, vacuum cleaner or special dust remover to keep sand and dust from the floor. At the entrance, use a good quality entrance mat.
- Initial maintenance: The initial maintenance is carried out after installation is complete. Ask your distributor for the correct product and care instructions.
- Cleaning and maintenance: The useful life of your bamboo floor will be considerably increased with suitable cleaning and maintenance. Do not use harsh detergents or products containing solvents and/or glycerine. For the lacquered material we advise to apply the Bamboo-flex polish at regular intervals. Be sure to follow the care instructions on the packaging. Only use a damp cloth to mop the floor. Do not over-wet.

## 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.

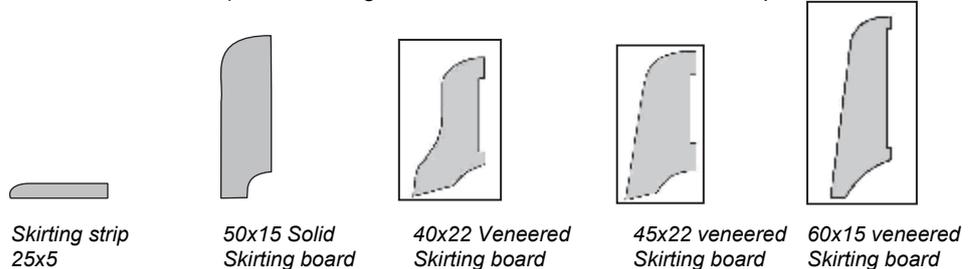
These instructions are subject to change. For the latest version go to [www.moso.eu](http://www.moso.eu).



# Moso® Skirting

## Product

MOSO supplies both skirting strips (to be nailed on the floor) and skirting boards (to be screwed on the wall). The skirting is both available in unfinished and pre finished.



Skirting strip  
25x5

50x15 Solid  
Skirting board

40x22 Veneered  
Skirting board

45x22 veneered  
Skirting board

60x15 veneered  
Skirting board

## Product line

### Skirting strip

Code Natural	Code Caramel	Style	Finish	Dimensions (mm)
BS-F100-**	BS-F150-**	PP	-	2000x25x5
BS-F200	BS-F250	PP	L	2000x25x5
BS-FDT201	BS-FDT251	HD	L	1830x25x5

### Solid skirting board

Code Natural	Code Caramel	Style	Finish	Dimensions (mm)
BS-DT100-L	BS-DT150-L	HD	L	1830x68x15
BS-H200-**	BS-H250-**	SP	-	2000x50x15
BS-H300-**	BS-H350-**	PP	-	2000x50x15
BS-H200-L	BS-H250-L	SP	L	2000x50x15
BS-H300-L	BS-H350-L	PP	L	2000x50x15

### Veneered skirting board

Code Natural	Code Caramel	Style	Finish	Dimensions (mm)
BS-P40-22-NSFL	BS-P40-22-CSFL	SP	L	2500x40x22
BS-P45-22-NSFL	BS-P45-22-CSFL	SP	L	2500x45x22
BS-P60-15-NSFL	BS-P60-15-CSFL	SP	L	2500x60x15

PP = Plain pressed

SP = Side pressed

HD = High Density

L = Lacquered

\*\* = Colors available consistent with flooring, Unibamboo and Rolls assortment

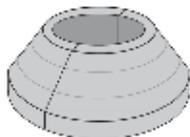
## Installation

- Skirting strip: Nailed on floor
- Skirting board: Screwed on wall

## Application

- Skirting strip: Apply to floors with fixed installation
- Skirting board: Apply to floors with floating installation and fixed installation

## Moso® Radiator pipe rosette



Code Natural	Code Caramel	Hole diameter	Finish	Dimensions (mm)
BR100-16	BR150-16	16mm	L	50x50x18
BR100-22	BR150-22	22mm	L	55x55x20

L = Lacquer

## Moso® Door stopper



Code Natural	Code Caramel	Finish	Dimensions (mm)
DS100	DS150	L	32x34 (DiamxHight)

L = Lacquer

## Moso® Stair nosing



Code Natural	Code Caramel	Style	Thick-ness	Finish	Fitting to:	Dimensions (mm)
BN-PP310	BN-PP360	PP	10mm	-	Bf-la401/bf-la451	2000x50x10/15
BN-SP310	BN-SP360	SP	10mm	-	Bf-la421/bf-la471	2000x50x10/15
BN-PP319	BN-PP369	PP	10mm	L	Bf-la409/bf-la459	2000x50x10/15
BN-SP319	BN-SP369	SP	10mm	L	Bf-la429/bf-la479	2000x50x10/15
BN-DT319	BN-DT369	HD	10mm	LM	Bf-dt409/bf-dt459	2000x50x10/15
BN-PP300	BN-PP350	PP	15mm	-	Bf-la710/la760/la300/la350	2000x55x15/20
BN-SP300	BN-SP350	SP	15mm	-	Bf-la510/bf-la560	2000x55x15/20
BN-PP309	BN-PP359	PP	15mm	L	Bf-la810/la860/la301/la351	2000x55x15/20
BN-SP309	BN-SP359	SP	15mm	L	Bf-la610/bf-la660	2000x55x15/20
BN-SP320	BN-SP370	SP	15mm	-	Bf-la320/bf-la370	2000x55x15/20
BN-SP329	BN-SP379	SP	15mm	L	Bf-la321/bf-la371	2000x55x15/20
BN-DT519	BN-DT569	HD	13mm	LM	Bf-dt301/bf-dt351	1830x55x13/18

PP = Plain pressed

SP = Side pressed

HD = High Density

L = Lacquered

LM = Lacquered matt

**AANBEVOLEN LIJM  
RECOMMENDED GLUE  
KLEBSTOFFEMPFEHLUNG  
COLLES RECOMMANDÉES  
COLAS RECOMIENDAS  
COLLES RACCOMANDATOS**

**UNIBAMBOO / VLOERBEDEKKING OP DE ROL  
UNIBAMBOO / FLOORING-ON-A-ROLL  
UNIBAMBOO / ROLLENWARE BODENBELAG  
UNIBAMBOO / SOL EN ROULEAU  
UNIBAMBOO / SUELOS EN ROLLOS  
UNIBAMBOO / PAVIMENTI IN ROTOLI**

<b>Merk Brand Marke Marque Marca Marchio</b>	<b>Produkt Product Produkt Produit Producto Prodotto</b>	<b>Lijmkam Trowel Spachtel Peigne à colle Llana Spatola</b>	<b>Gebruik Amount required Verbrauch Consommation Consumo Consumo</b>
BonaKemi	R770	A2	300-350g/m <sup>2</sup>
Bostik	Sadertac V3	B1	300-350g/m <sup>2</sup>
	Saderlino	B1	350-400g/m <sup>2</sup>
	Colle HPA 130	B1	400-450g/m <sup>2</sup>
Emficryl Polyvalente	27038A	A2/B1	300-400 g/m <sup>2</sup>
Forbo	Eurocol 640	A2	225-275g/m <sup>2</sup>
	Eurocol 540	A2	250-350g/m <sup>2</sup>
	Eurostar Fibre 643	A2	250-450g/m <sup>2</sup>
Mapei	Adesilex G20*	A2/B1	250-300g/m <sup>2</sup>
	Mapecryl	A2/B1	250-350g/m <sup>2</sup>
	S955	A2/B1	300-350g/m <sup>2</sup>
Wakol	Wakol D3309	A2/B1	400-500g/m <sup>2</sup>
	Wakol D3240	A2/B1	300-350g/m <sup>2</sup>
	Wakol D3311	A2/B1	350-450g/m <sup>2</sup>
	Wakol D3360	A2/B1	300-350g/m <sup>2</sup>
	Wakol D3540	A2/B1**	250g/m <sup>2</sup>
Uzin	Uzin KE 2000S	A2	200-350g/m <sup>2</sup>
	Uzin MK 82	B3	300-350g/m <sup>2</sup>
	Uzin MK 92S	B3	300-350g/m <sup>2</sup>
	Uzin MK 100	B3	300-350g/m <sup>2</sup>

\* Speciaal voor niet absorberende ondergrond (zoals plavuizen) / Especially for not absorbing sub floors (i.e. ceramic tiles) / Speziell für nicht absorbierende Flächen sowie keramische Fliesen / Spécialement pour des sols non absorbants (comme des dalles ceramiques) / Especialmente para suelos que no absorban (por ejemplo losetas de cerámica) / Soprattutto per sottofondi non assorbire (piastrelle di ceramica).

\*\* Eventueel ook met roller aan te brengen / Can also be applied with a roller / Kann auch mit ein Roller angebracht werden / Appliquer avec un rouleau aussi possible / También se puede aplicar con rodillo / Può anche essere applicato con un rullo

Volg altijd het advies van de lijmleverancier.  
Always follow the advice of the glue supplier.  
Folgen Sie immer der Anweisung vom Klebstofflieferant.  
Il faut toujours suivre les conseils du fournisseur de colle.  
Siempre siga el consejo del proveedor de cola.  
Sempre seguire i consigli del fornitore di colla.



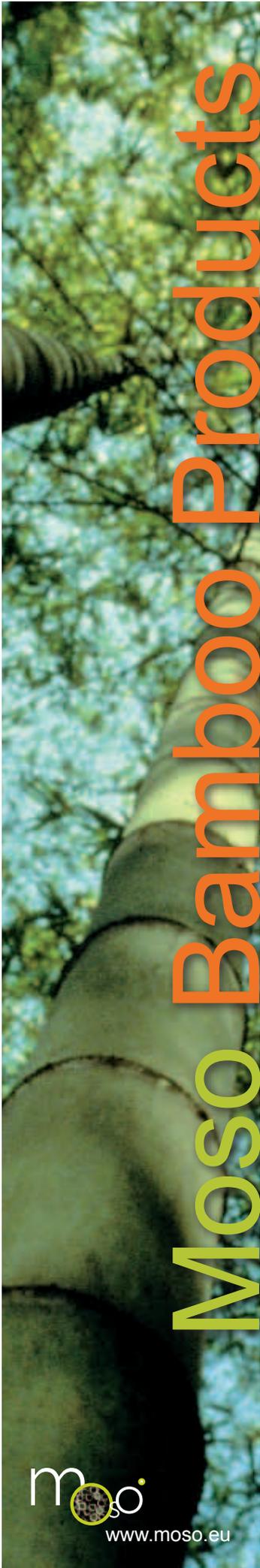
# MOSO<sup>®</sup> Flooring and Floor heating

Not all MOSO floor types can be installed on a floor heating system. In the installation instruction or the datasheet of your MOSO floor you will find whether it is suitable for installation on floor heating or not.

In case your MOSO floor is suitable, please make sure the following conditions are met:

- Installation is only possible on a warm water floor heating system (so not on an electrical system).
- The installation can only take place after determining the moisture content of the subfloor by means of the CM method. This value should be below the values as indicated in the installation instruction.
- The slab should at least be 50mm thick (minimal distance to the tubes: 35mm)
- The flooring should be professionally glued to the subfloor.
- The flooring should be glued with glue which is suitable for using on a floor heating system.
- The surface temperature of the flooring should not be over 25°C.
- Temperature ‚detection stickers‘ should be built in on each heating loop.
- During installation the surface temperature of the slab should be around 18-20°C. The relative air humidity should be approx. 55%.
- During installation of the flooring the heating system should be turned off and the subfloor should be cooled off.
- The heating system should not be used until after 2 weeks after installation. The system should be warmed up slowly and the temperature of the flooring should never exceed 25°C.
- When placing MOSO flooring on floor heating it is always possible that seams between the boards and cupping can develop. To minimise this you need to create optimal room conditions: a temperature of approx. 20°C and a 55-65% relative air humidity.





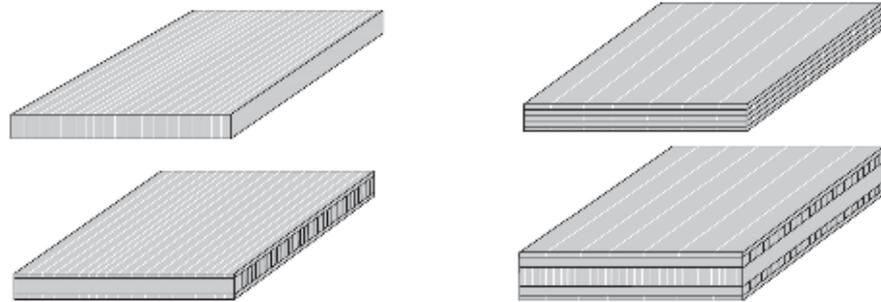
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# Moso® solid panel

## Product

MOSO solid panels consist of multiple layers of bamboo, where the middle layer can be either plain pressed or side pressed. These bamboo panels are especially interesting in those applications where the side of the panel remains visible, like steps of a staircase and kitchen work tops.



## Product line

Code Natural	Code Caramel	Code Thermo	Style	Thickness (mm)	Construction (mm)	Dimensions (mm)
BP-MP1230	BP-MP1280		PP	16	3,5-9-3,5	2440x1220
BP-MP1210	BP-MP1260		PP	20	4-12-4	2440x1220
BP-5P131	BP-5P181		PP	20	5x4	2440x1220
BP-MP1215	BP-MP1265		PP	25	4-17-4	2440x1220
BP-MP1240	BP-MP1290		PP	30	5-20-5	2440x1220
BP-5P105	BP-5P155		PP	40	4-8-16-8-4	2440x1220
BP-5P140	BP-5P190		PP	40	4-6-20-6-4	3000x700
BP-5P145	BP-5P195		PP	40	4-6-20-6-4	4000x610
BP-MP1430	BP-MP1480		SP	16	3,5-9-3,5	2440x1220
BP-SP800	BP-SP850		SP	19	1x19	2440x1220
BP-MP1410	BP-MP1460	BP-MP1660	SP	20	4-12-4	2440x1220
BP-MP1415	BP-MP1465		SP	25	4-17-4	2440x1220
BP-MP1440	BP-MP1490		SP	30	5-20-5	2440x1220
BP-5P205	BP-5P255		SP	40	4-8-16-8-4	2440x1220
BP-5P240	BP-5P290		SP	40	4-6-20-6-4	3000x700
BP-5P245	BP-5P295		SP	40	4-6-20-6-4	4000x610
BP-DT1000	BP-DT1050		HD	20	4-12-4	2440x1220
BP-DT5000	BP-DT5050		HD	38	3-6-20-6-3	2440x1220

PP = Plain pressed

SP = Side pressed

HD = High Density (outer layers)

## Application

- Attention: before pressing the panels both glue surfaces have to be sanded to create an optimal adhesion between the panels. This is especially important for cold pressing where multiple panels are piled and pressed at the same time.
- Advised room conditions: temperature approx. 20°C. Air humidity 50-65%.
- The MOSO solid panels always have one exposed side and one backside. The backside generally contains more colour variation than the exposed side.

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell); DT: 9,5 kg/mm<sup>2</sup>
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/ m<sup>3</sup>; HD version: 1050 kg/m<sup>3</sup>
- Glue: D3 water resistant
- Fire resistance: EN 13501-1: D-s1 (40mm thickness)
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)
- Elastic modulus : ca. 4300 N/mm<sup>2</sup> (40mm). Other panels on request.

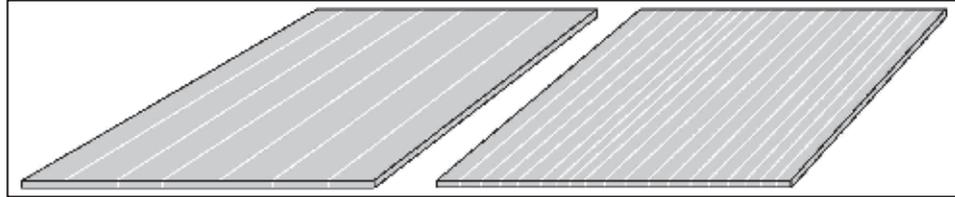


www.moso.eu

# Moso<sup>®</sup> Thick Veneer

## Product

MOSO Thick Veneer is mainly used as a panel covering material, where the bamboo is pressed, double sided, on a base (for example MDF or chipboard). Most applications require pressing on both sides of the base, to prevent possible bending. The result is a "sandwich panel".



*Thick veneer plain pressed*

*Thick veneer side pressed*

## Product line

Code Natural	Code Caramel	Style	Thickness (mm)	Type	Construction (mm)	Dimensions (mm)
BP-1P800	BP-1P850	PP	3	1 ply	1x3	2440x1220
BP-1P102	BP-1P152	PP	5	1 ply	1x5	2210x610
BP-1P802	BP-1P852	PP	5	1 ply	1x5	2440x1220
BP-SP300	BP-SP350	SP	3	1 ply	1x3	2440x1220
BP-SP102	BP-SP152	SP	5	1 ply	1x5	2210x610
BP-SP302	BP-SP352	SP	5	1 ply	1x5	2440x1220
BP-DT400	BP-DT450	HD	4	1 ply	1x4	2440x1220

PP = Plain pressed

SP = Side pressed

HD = High Density

## Application instruction

Attention: before pressing the panels both glue surfaces have to be sanded to create an optimal adhesion between the panels. This is especially important for cold pressing where multiple panels are piled and pressed at the same time.

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell); DT: 9,5 kg/mm<sup>2</sup>
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/ m<sup>3</sup>; HD version: 1050 kg/m<sup>3</sup>
- Glue: D3 water resistant
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)



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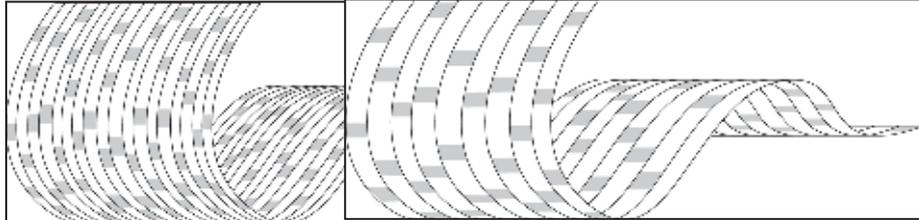
# Moso® Veneer

(Patent nr. NL 1019971)

## Product

MOSO veneer is sliced from pressed bamboo blocks. It shows a narrow line pattern (“side pressed”) or a wide pattern (“plain pressed”) with subtle colour variation and characteristic bamboo nodes.

To avoid cracks during handling MOSO bamboo veneer is backed with a thin, but strong cellulose fleece, which enables easy pressing of the veneer sheets on a panel. MOSO bamboo veneer is mainly offered in A-selection (regular in colour) and can be processed with a minimum of cutting and selection waste.



Veneer side pressed

Veneer plain pressed

## Product line

Code Natural	Code Caramel	Style	Thickness (mm)	Dimensions (mm)
BV-PPN100	BV-PPC150	PP	0,6	2500x430
BV-PPN104	BV-PPC154	PP	0,6	2500x1250
BV-PPN138	BV-PPC188	PP	0,6	2710x430
BV-SPN100	BV-SPC150	SP	0,6	2500x430
BV-SPN104	BV-SPC154	SP	0,6	2500x1250
BV-SPN138	BV-SPC188	SP	0,6	2710x430
BV-SPN145	BV-SPC195	SP	0,6	3100x430
BV-SPN146	BV-SPC196	SP	0,6	3100x1250

PP = Plain pressed  
SP = Side pressed

## Application

MOSO veneer normally is pressed, double sided, on panels (like chipboard, multiplex or MDF). The backing is a cellulose fleece which is bonded with D3 water-resistant PVAC glue. The cellulose backing can endure shortly temperatures above 220 degrees Celsius, for example when splicing the sheets.

When pressed under high pressure and high temperature a considerable cooling time should be taken into account before stacking the cooled (max. 60 °C) panels.

To press the backed bamboo veneer MOSO advises to carry out a glue test first, to determine the exact pressing time, temperature and pressure.

The standard thickness of the veneer is 0,6mm: 0,5mm bamboo and 0,1mm backing material. In case the veneer gets sanded, the end-thickness should be minimum 0,2mm.

## Technical characteristics

- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg / m<sup>3</sup>
- Backing: Non woven cellulose fleece 30 gr / m<sup>2</sup>  
D3-waterresistant PVAC glue (50 gr / m<sup>2</sup>)
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)  
<0,025 mg/m<sup>3</sup> (E0 norm) - when using EPI glue



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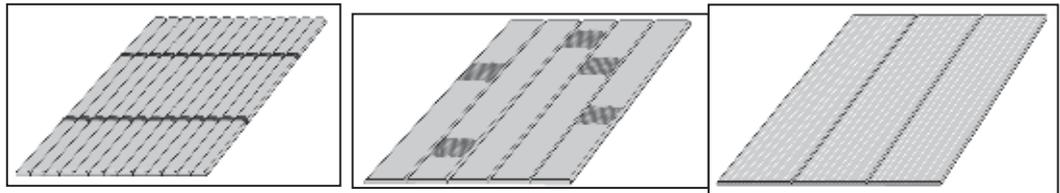


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FSC Only the products certified as such, are FSC certified

# Moso® Tambour

## Product

MOSO Tambour is bamboo in a flexible form, often applied to cover a carrier panel (i.e. MDF). In this case the bamboo strips have not been pressed together, but have been connected in an alternative, flexible way. There are 3 possibilities: in the MOSO 'Tatamat' the bamboo strips have been connected by using a weaving thread. In the MOSO 'Panda' the strips have been connected by means of tape on the back side (also no weaving thread visible). A variety to this version is the MOSO 'ZEN', using extra wide bamboo strips (50mm) which are created by pressing bamboo veneer (double sided) on a HDF core. All MOSO Tambour products have a fabric backing.



Tatamat

Panda

Zen

## Product line

Code Natural	Code Caramel	Style	Strip size (mm)	Finish	Backing	Roll Dim. (m)*
MTNF5-204-**	MTCF5-204-**	Tatamat	2x5	- / L / SL	Fabric	2,04x45
MPNF3.5-204-**	MPCF3.5-204-**	Panda	2x3.5	- / L / SL	Fabric	2,04x45
MPNF3.5-244-21	MPCF3.5-244-21	Panda	2x3.5	-	Fabric	2,44x30
MPNF7-204-**	MPCF7-204-**	Panda	2x7	- / L / SL	Fabric	2,04x45
	MPCFA15-204-**	Panda	2x15	- / L / SL	Fabric	2,04x45
MPNF17-125-**	MPCF17-125-**	Panda	2x17	- / L / SL	Fabric	1,25x45
MPNF17-204-**	MPCF17-204-**	Panda	2x17	- / L / SL	Fabric	2,04x45
MPNF17-244-21	MPCF17-244-21	Panda	2x17	-	Fabric	2,44x30
MZNF50-204-**	MZCF50-204-**	Zen	3x50	- / L / SL	Fabric	2,04x30
	MZCF50-204-**HF	Zen	4.2x50	- / L / SL	Fabric	2,04x15
	MZCF50-244-21HF	Zen	4.2x50	-	Fabric	2,44x15

L = Lacquer  
SL = Stained Lacquer

\*) Alternative widths: 140cm or 160 cm.

\*\*) The last 2 positions of the product code represent the finish:

21=unfinished, 22=lacquered. In addition, the following colours are available:

01=White, 11=Black, 12=Elephant, 25=Mahogany, 40=Blue, 60=Taupe, 65=Blossom, 70=Colonial, 75=Chestnut

## Application (summary)

- Common carrier panels: MDF, chipboard, multiplex.
- Pressing: use a suitable glue (PVAC, cold pressed). Use a suitable material (for example veneer) to cover the other side of the panel, to prevent bending of the panel.

## Technical characteristics

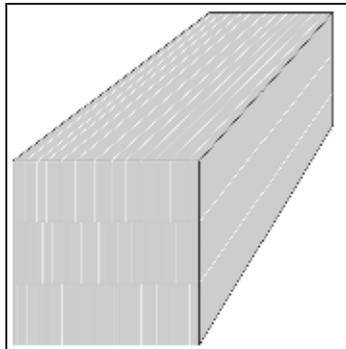
- Hardness: 3,5 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/m<sup>3</sup> (HDF of the ZEN version: 800 kg/m<sup>3</sup>)
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)



# Moso® Solid Joist

## Product

The MOSO solid joist consists of 3 layers of bamboo (side pressed style). The joist has numerous applications, but is mostly applied as raw material for banisters (for which the material is being round milled).



## Product line

Code Natural	Code Caramel	Style	Thickness (mm)	Type	Construction (mm)	Dimensions (mm)
BL-200	BL-250	SP	55	3 ply	3x18,3	2440x55

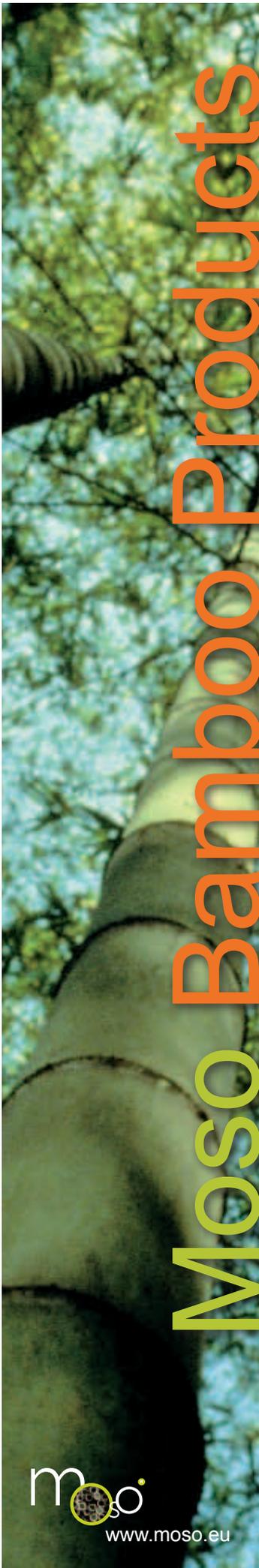
SP = Side pressed

## Technical characteristics

- Hardness: 4,0 kg/mm<sup>2</sup> (Brinell)
- Shrink/swell: 0,14% per 1% change in moisture content
- Equilibrium MC: 10% at 20 °C and 65% Rel. Air Humidity  
8% at 20 °C and 50% Rel. Air Humidity
- Density: 700 kg/ m<sup>3</sup>
- Glue: D3 water resistant
- Fire resistance: EN 13501-1: Cfl-s1
- Emission formaldehyde: <0,124 mg/m<sup>3</sup> (E1 norm)



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## 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 and even 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.
- 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

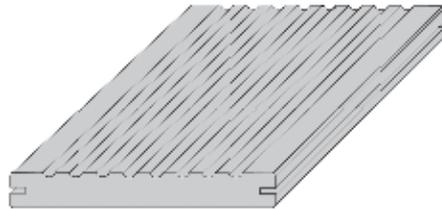
- The claim must be made in writing, within 30 days, to the MOSO dealer / seller, a MOSO subsidiary or directly to MOSO INTERNATIONAL BV, de Marowijne 43, NL-1689AR ZWAAG, Netherlands.
- MOSO International BV reserves the right to check the claimed damage, after appointment, on site.

*Errors and technical alterations reserved*

## BAMBOO X-TREME™ DECKING

### Product

The BAMBOO X-Treme™ decking is a heat treated, high density bamboo board, suitable for outdoor applications, especially as decking. One sole reversible decking board covers all possible outdoor uses: for screw down or fastener installation, with ribbed or flat surface. Bamboo X-Treme™ is provided with tongue-and-grooved head sides, thus creating more flexibility in the installation and a reduction of material loss. The special symmetrical side profile allows installation with Cliplam® fasteners as well as with several other existing fasteners. BAMBOO X-Treme™ is available in an oiled version (WOCA water based exclusive, teak colour) and unfinished version.



### Product line

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

B = Bevel (also on headside)  
 F = Flat  
 R = Ribbed  
 OW = Oil Woca

### Installation

Please read the full installation instructions on the backside.

### Technical characteristics

- Durability:	Class 1 in accordance with EN113 / EN350-1 Class 4 in accordance with EN 335 (usage Class)
- Surface fungus resistance:	Class 0 in accordance with EN152
- Dimensional stability:	24hours submerging in water 20 degrees Celsius: length: + 0,1 % / width: + 0,9 %
- Density:	appr. 1200 kg / m <sup>3</sup>
- Hardness (EN1534):	9,5 kg / mm <sup>2</sup> (Brinell )
- Elasticity Modulus (EN408):	10737 N/mm <sup>2</sup>
- Breaking strength (EN408):	50,30 N/mm <sup>2</sup>
- Strength class (EN338):	D50

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



# 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 1-2% to enable water to run off the surface.
- Secure 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.
- Keep at least 5 mm 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.
- Use sub frame joists with the minimum size of 40x70 mm. Suitable joists are those with the same durability class as the decking; Moso sub frame joists, stable hard wood joists or impregnated pine joists. Avoid direct contact with the earth.
- It is advisable to install the boards on sub frame joists with max 460 mm space between the joists centers (board length supported by 4 battens). The maximum distance of the head side joints to the center of the sub frame joist is 150 mm.
- There should be cement/stone tiles 40-50mm thick, to distribute the pressure of the sub frame.
- Generally the sub frame joists should be laid 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.
- It is advisable to apply wax or oil on end sides and cross cut board ends to avoid water penetration.

## Please note

- The BAMBOO X-TREME™ outdoor board is a natural forest product, which can vary in color, grain and appearance. Color will change over time depending on the maintenance schedule.
- 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 oil or wax on cross end sides of the boards.
- The surface sides of the boards will 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.
- 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

### Installation with fasteners

- Determine the surface side of the boards (ribbed- or flat surface).
- Use the Moso cliplam 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. **Be careful not to screw to deep and damage the fastener!**
- Use approx. 20 clips per / m<sup>2</sup>. Use a clip on each sub beam.
- Only use the by MOSO offered A2 stainless steel decking screws (4 x 40 mm)
- In extreme cases some boards may slide. This can be avoided by screwing the board in the groove fixing it to the sub beam.

### Screw down installation

- Determine the surface side of the boards (ribbed- or flat surface).
- Pre drill the screw holes 20 mm from the side of the board.
- Always screw both sides (left and right) of the board.
- Use A2 stainless steel decking screws (ca 5x50mm)

## Maintenance and cleaning

### Prefinished

BAMBOO X-TREME™ outdoor decking is double sided, factory oiled with WOCA exclusive water based decking oil (teak color).

- 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 dirt water residue on the boards with clean water and let the floor dry.
- Apply a new layer of WOCA Decking Oil (WOCA exclusive decking oil, teak color). When not applying new outdoor oil 1-2x per year, the floor will turn in to a grey color tone and the typical bamboo wood grain structure will become less visible. Follow the instructions from WOCA ([www.woodcaredenmark.com](http://www.woodcaredenmark.com)).
- 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, a first time application of the decking is necessary to impregnate the decking. It is advised to use water based oil for maximum impregnation. After this first application the decking can remain without treatment for natural greying.

- When applying a finish (oil/ saturator) it is necessary to apply the finish 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

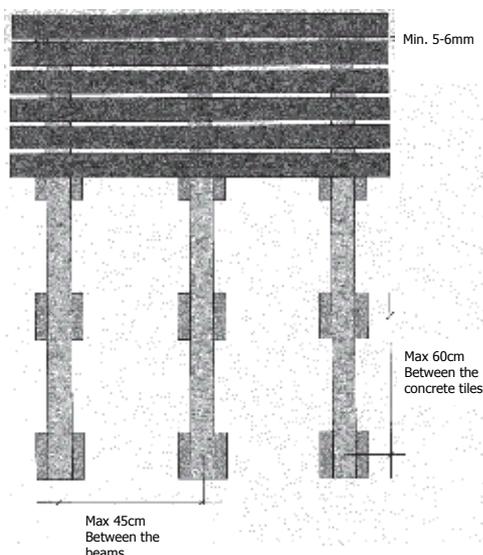
Store BAMBOO X-TREME™ in a dry, cool place protected against dust and direct sunlight.

## 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](http://www.bamboo-xtreme.eu).

[www.moso.eu](http://www.moso.eu)



## BAMBOO X-TREME™ ACCESSORIES

### Cliplam® Fastener + screw

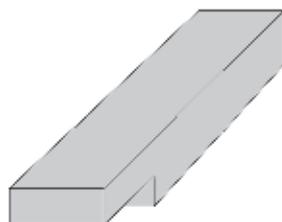
With these fasteners BAMBOO X-TREME decking can be installed. When installed correctly there will be 5-6mm gaps between the boards. The clip is supplied with a matching A2 stainless steel screws (torx).



Product Code	Item	Material	Color	Dimensions (mm)
CLIP-SCREW-BX02	Clip	PP	Black	33 x 21,5
	Screw	A2 stainless	Black	4 x 40

### 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



