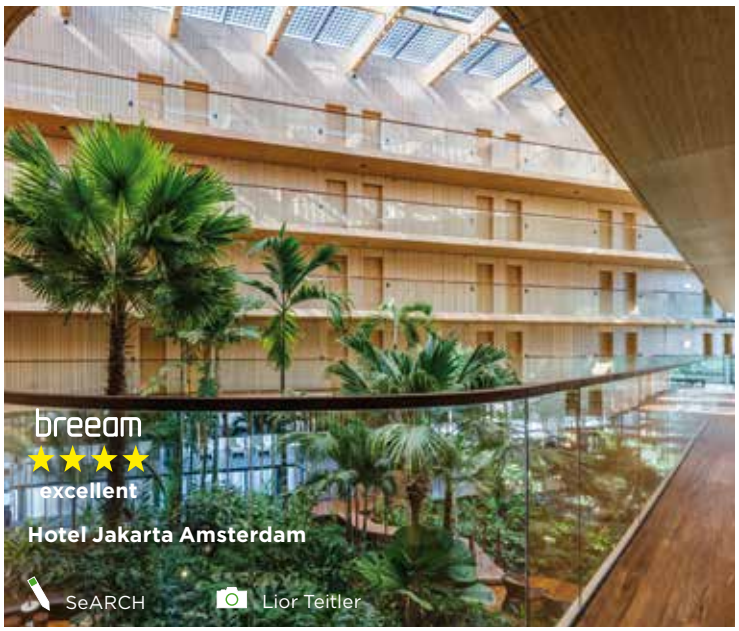


MOSO® Bamboo Products: a sustainable choice!

To determine the eco-impact of a product, every phase of the life cycle should be taken into account. MOSO® Bamboo Products offer clear sustainability advantages in each phase and are even proven CO_2 neutral over the full life cycle (see also right page)!

growth phase

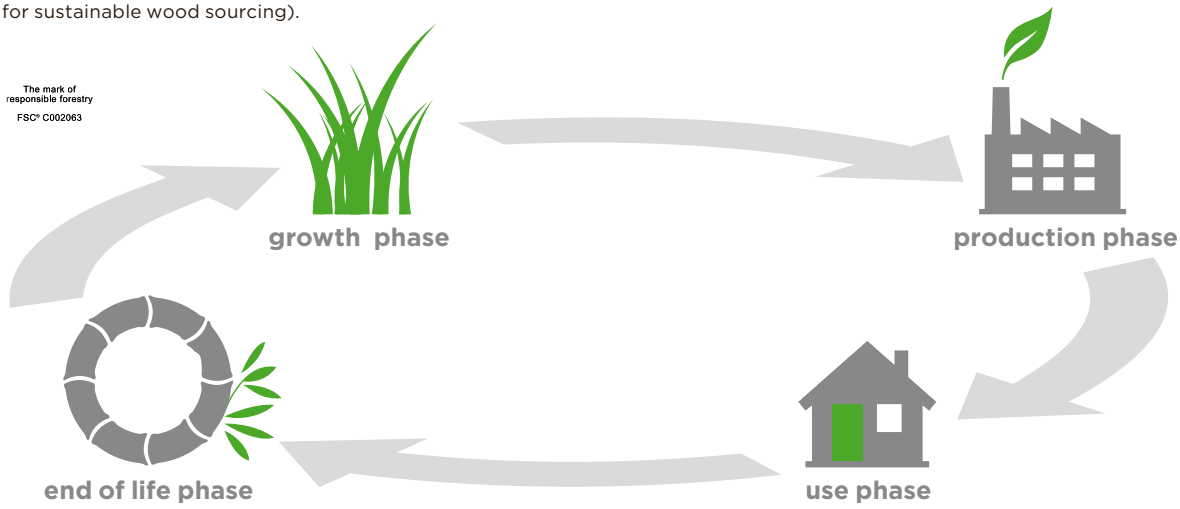
- Made from the extremely rapidly renewable giant bamboo species “Moso”, renowned for its CO_2 absorbing and O_2 producing capacity.
- Abundantly available in China (approx. 7 mio ha) and always sourced from sustainably managed forests and plantations.
- The Moso bamboo plant consists of multiple stems. As a result, several stems may be harvested each year without killing the mother plant.
- **Optional**: MOSO® Bamboo FSC®-certified (most important ecolabel for sustainable wood sourcing).

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

production phase

- The MOSO® Bamboo Products are made in production facilities that are ISO 9001 and ISO 14001 (important quality standards) certified.
- **Optional**: use of eco-friendly adhesive with no added formaldehyde, complying with the strictest emissions norm: E0 (EU requisite = E1).

E0 HCHO



end of life phase

- As a non toxic, natural material, MOSO® Bamboo Products offer no restrictions in the end-of-life phase.
- If maintained well, MOSO® Bamboo Products may be reused in similar applications (upcycling).
- If this is not possible, MOSO® products may be safely used as input material for the chipboard industry (downcycling).
- If up- or downcycling is not possible, it is recommended to use the bamboo material as sustainable substitute for fossil fuels in a biomass energy plant for the production of green energy.
- MOSO® Bamboo Products also fit very well in a Circular Economy concept (**www.inbar.int/bamboo-in-the-circular-economy**).

use phase

- Durable = Sustainable: because of the high hardness, density and stability, MOSO® Bamboo Products last very long (less replacement) even in tough circumstances.
- Proven Quality: all MOSO® Bamboo Flooring Products meet the requirements of EN 17009 and are guaranteed up to 30 years.
- Healthy indoor climate: very low emissions of volatile organic compounds (VOCs); MOSO® floors have been rated A and A+ in France with respect to VOC emissions: the best classification possible!
- Extra credits for sustainable building eco-labels, such as BREEAM and LEED (see backpage for details).

DoP EN 17009 — breeam

MOSO® UltraDensity®

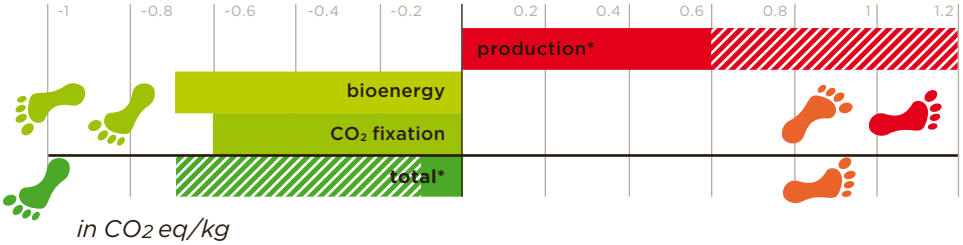
MOSO® Plain Pressed / Side Pressed

MOSO® High Density®

MOSO® Bamboo X-treme®

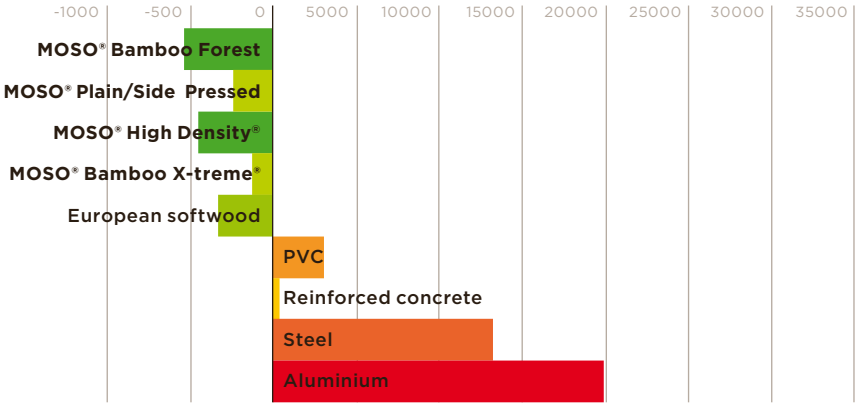
carbon footprint

MOSO® Bamboo Products: CO_2 neutral or better over full life cycle
MOSO® has conducted an LCA and carbon footprint study together with Delft University of Technology (TU Delft) and INBAR. The report (**www.moso.eu/lca**) concludes that all assessed MOSO® products (all solid bamboo flooring, decking, beams, panels and veneer) are CO_2 negative over the full life cycle ("cradle till grave"). In this result the high growing speed of Moso bamboo (see graph below) has not even been taken into account, and can be perceived as additional environmental benefit. The environmental impact of MOSO® products, excluding carbon sequestration effect, was also published in an official Environmental Product Declaration (EPD) following EN 15804 (**www.moso.eu/epd**).



in CO_2 eq/kg

** result depending on MOSO® product assessed*

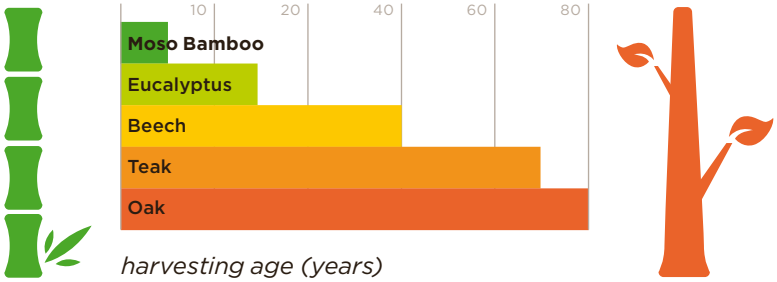


carbon footprint over life cycle (kg CO_2 eq/m^3 material)

Data abiotic materials from Idemat 2020 database (TU Delft) (industry averages).

unsurpassed growing speed

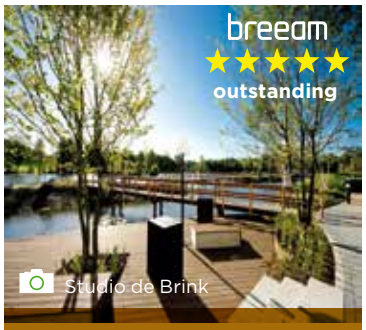
Bamboo: the fastest growing plant in the world
Because of the fast growth, Moso bamboo is managed as an agricultural crop: the annual harvest of the 4-5 year old stems – compared to 80 years for tropical hardwood! - provides a steady annual income to farmers and stimulates the bamboo plant to reproduce even faster. Therefore, by default no deforestation occurs with production of MOSO® Bamboo Products, while large amounts of CO_2 are captured in the bamboo forests and products (**www.inbar.int/understanding-bamboos-climate-change-potential**).



harvesting age (years)

MOSO® Flooring
CityLife Shopping District Milan
LEED Gold

MOSO® Panels, Beams & Veneer
ASICS EMEA , The Netherlands
LEED Gold - WELL Gold



MOSO® Outdoor
Venco Campus, The Netherlands
BREEAM Outstanding

MOSO® Unlimited
Campus Palmas Altas, Spain
LEED Platinum

contribution MOSO® Bamboo Products to LEED & BREEAM

LEED BD+C - v4	contribution	flooring	beams, panels & veneer	outdoor (bamboo x-treme®)
MR Credit - Building life-cycle impact reduction	direct	yes (if solid)	yes	yes
MR Credit - Building product disclosure and optimization - environmental product declarations	direct	yes (if solid)	yes	yes
MR Credit - Building product disclosure and optimization – sourcing of raw materials	direct	yes (if requested with FSC®)	yes (if requested with FSC®)	yes (if requested with FSC®)
MR Credit - Building product disclosure and optimization – material ingredients (Reach optimization)	direct	yes	yes	yes
EQ Credit - Low Emitting Materials	direct	yes	yes	
SS Credit - Heat Island Redustion	direct			yes
IN Credit - Innovation	direct	yes (if used in innovative applications or if helps to meet twice the criteria limit)	yes (if used in innovative applications or if helps to meet twice the criteria limit)	yes (if used in innovative applications or if helps to meet twice the criteria limit)
EQ Credit - Interior Lighting	indirect	yes (if natural colour)	yes (if natural colour)	
EQ Credit - Acoustic performance	indirect		yes (optional)	
BREEAM International (2016) credit	**contribution**	**flooring**	**beams, panels & veneer**	**outdoor (bamboo x-treme®)**
HEA 2 - Indoor Air Quality	direct	yes	yes	yes (if used indoors)
MAT 1 - Life Cycle Impacts	direct	yes (if solid)	yes	yes
MAT 3 - Responsible Sourcing of construction products	direct	yes (if requested with FSC®)	yes (if requested with FSC®)	yes (if requested with FSC®)
MAT 5 - Designing for durability and resilience	direct	yes (if High Density®)	yes (if High Density®)	yes
Innovation	direct	yes (if used in an innovative application)	yes (if used in an innovative application)	yes (if used in an innovative application)
MAN 2 - Life cycle cost and service life planning	indirect	yes (if High Density®)	yes (if High Density®)	yes
HEA 1 - Visual comfort	indirect	yes (if natural colour)	yes (if natural colour)	
HEA 5 - Acoustic performance	indirect		yes (optional)	

AIA Continuing Education Provider

Follow our Booming Bamboo course at:
▶ www.moso-bamboo.com/ceu

More information at:
▶ www.usgbc.org
▶ www.breeam.com

MOSO®: World Leading in Bamboo

There is no other company worldwide with an equally – and still expanding - broad assortment in high quality bamboo products. MOSO's head office, with the biggest bamboo warehouse in Europe, is located near Amsterdam. Furthermore, MOSO® has offices in Barcelona, Milan, Cape Town, Pennsauken (USA), Dubai and Hangzhou (China). MOSO® works with several partner companies and leading distributors worldwide to guarantee the availability of MOSO® products in each region.

Besides our exceptionally broad assortment in building solutions for indoors & outdoors, we are able to go even further. For industrial clients we develop unique customized solutions such as the 200.000m² ceiling panels at Madrid International Airport.

Furthermore, MOSO® bamboo products have been installed in leading green building projects worldwide such as Tel-Aviv University (The Porter School of Environmental Studies - LEED Platinum), CityLife Shopping District in Milan (LEED Gold), Hotel Jakarta in Amsterdam (BREEAM Excellent) and the Venco Campus in Eersel (BREEAM Outstanding).

The proof is the impressive line of references and clients such as Madrid Airport, BMW, AkzoNobel, SNCF, Texaco, Mammoet (Jacking Beams), Guggenheim Museum, Marriot Hotels (W Hotel), Rabobank, United Nations (FAO), Mercedes and CitizenM Hotels.
For an overview of our references and clients please refer to our website **▶ www.moso.eu/references**

More information about bamboo is available in the book "Booming Bamboo – the (re-)discovery of a sustainable material with endless possibilities" at **▶ www.boomingbamboo.com** or request MOSO® for a copy.

More information about carbon sequestration possibilities of bamboo forests and products at **▶ www.inbar.int/understanding-bamboos-climate-change-potential**.

More information about potential of bamboo products within the Circular economy at **▶ www.inbar.int/bamboo-in-the-circular-economy**.

www.moso-bamboo.com

moso® bamboo products

EN-2020-12