



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

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



durable



**fire
resistant**



sustainable



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MOSO® Bamboo X-treme®

test results



The excellent performance of MOSO® Bamboo X-treme® has been extensively tested by acknowledged research institutes. Find a summary of the most important test results below. Full reports are available upon request. **Only with MOSO® Bamboo X-treme® can you be sure to have the original, unique product.** Other products that copy the original do not offer the same hardness and level of durability, dimensional stability and ecology. With a look-alike product, there is a large risk of claims after installation. Always ask for the original, certified MOSO® Bamboo X-treme® products!



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

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

According to EN 350, the durability class is determined based on the x-value. To calculate the x-value, the median mass loss of the test species is compared to the median mass loss of the Beech or Pine references. Hardwoods are compared to Beech, Softwoods are compared to Pine. As Bamboo is neither softwood nor hardwood a comparison is made with both reference wood species Pine sapwood and Beech.


Based on the mass loss found and the comparison to Beech and Pine, the tested MOSO Bamboo X-treme, *Heat Treated Strand Woven Bamboo*, can be classified in durability class 1 when using the method described in EN 350.

MOSO Bamboo X-treme, *Heat Treated Strand Woven Bamboo*, performs comparable to Azobé and Merbau. Little variance is found between the different boards.

durability

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

class 1



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


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

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

durability

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

class 1



Resistance of Heat Treated Strand Woven Bamboo against blue staining fungi

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

4 Conclusion

On behalf of Moso International BV an EN 152 blue stain test was performed on Heat Treated Strand Woven bamboo. UV- weathering was used as preconditioning of part of the samples. The combination of UV light and water spray resulted in strong discoloration of the surfaces of both the bamboo samples and the Pine sapwood reference samples.

Neither on the weathered nor on the original Bamboo samples discoloration of the blue stain fungi or the hyphae of the blue stain fungi could be observed. As a result it can be concluded that the susceptibility of this Heat Treated Strand Woven Bamboo towards blue stain is very low.

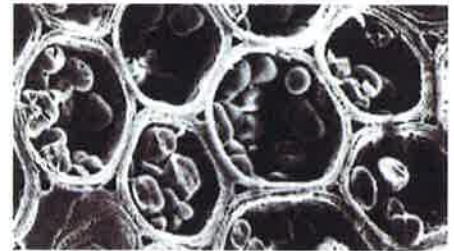
resistance against surface fungi

EN 152

class 0

from bamboo to Bamboo X-treme®

For centuries bamboo poles and bamboo components have been used in outdoor applications. To guarantee a long lasting product for outdoor use, many protective measures have to be taken. In dry environments poles will crack and the bamboo inner wood material, due to its high "sugar"-components, will be easily attacked by micro-organisms and fungi. In China bamboo can be replaced cost efficiently, but in Western countries this is not an option. Therefore, wouldn't it be great to find a way to use one of the fastest growing plants on earth and to make the material suitable for outdoor applications?



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

new production methods

With this challenge MOSO® started to research and test various existing methods to protect bamboo in outdoor applications. The wood protection methods initially tested, which are also often used by other bamboo suppliers, were not satisfactory and did not perform according to MOSO's quality standard. Increasing the density of the bamboo and combining this with a special heat treatment process at (200°C), improves the durability and stability of bamboo. This is called the "Thermo-Density®" treatment.

In 2009 the relevant laboratory and practical tests were done, which proved that the Thermo-Density® treatment is the right method (and currently the only effective solution) to make bamboo suitable for outdoor applications.

highest durability class

Untreated bamboo has a durability Class 5 according to EN 350 (not durable). By modifying the bamboo with the Thermo-Density® treatment, the dimensional stability of bamboo is improved by approximately 50%. Besides stability improvement, the durability is improved to the best durability class possible, from Class 5 to Class 1 (CEN/TS 15083-2 class 1 - simulated graveyard test, CEN/TS 15083-1 class 1 according to EN 350).

MOSO® Bamboo X-treme® is also well protected against superficial fungi (EN 152, Class 0), and achieves the use/risk Class 4 according to EN 335. MOSO® Bamboo X-treme® is the only bamboo material available on the market to perform to this level.

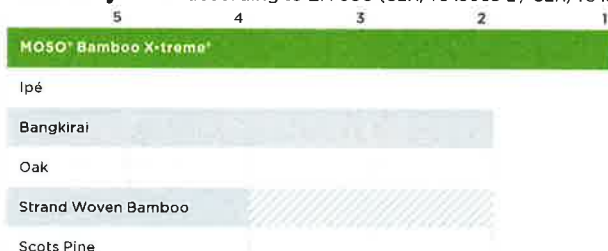
CO₂ neutral

MOSO® commissioned Delft University of Technology to execute an official LCA and carbon footprint study according to ISO 14040/44. The report, available on request, concludes that MOSO® Bamboo X-treme® is CO₂ neutral or better over the full life cycle. In fact, because of the superior durability, MOSO® Bamboo X-treme® does not have to be replaced as often as other natural materials while at the same time taking advantage of the enormous growth capacity of giant bamboo.

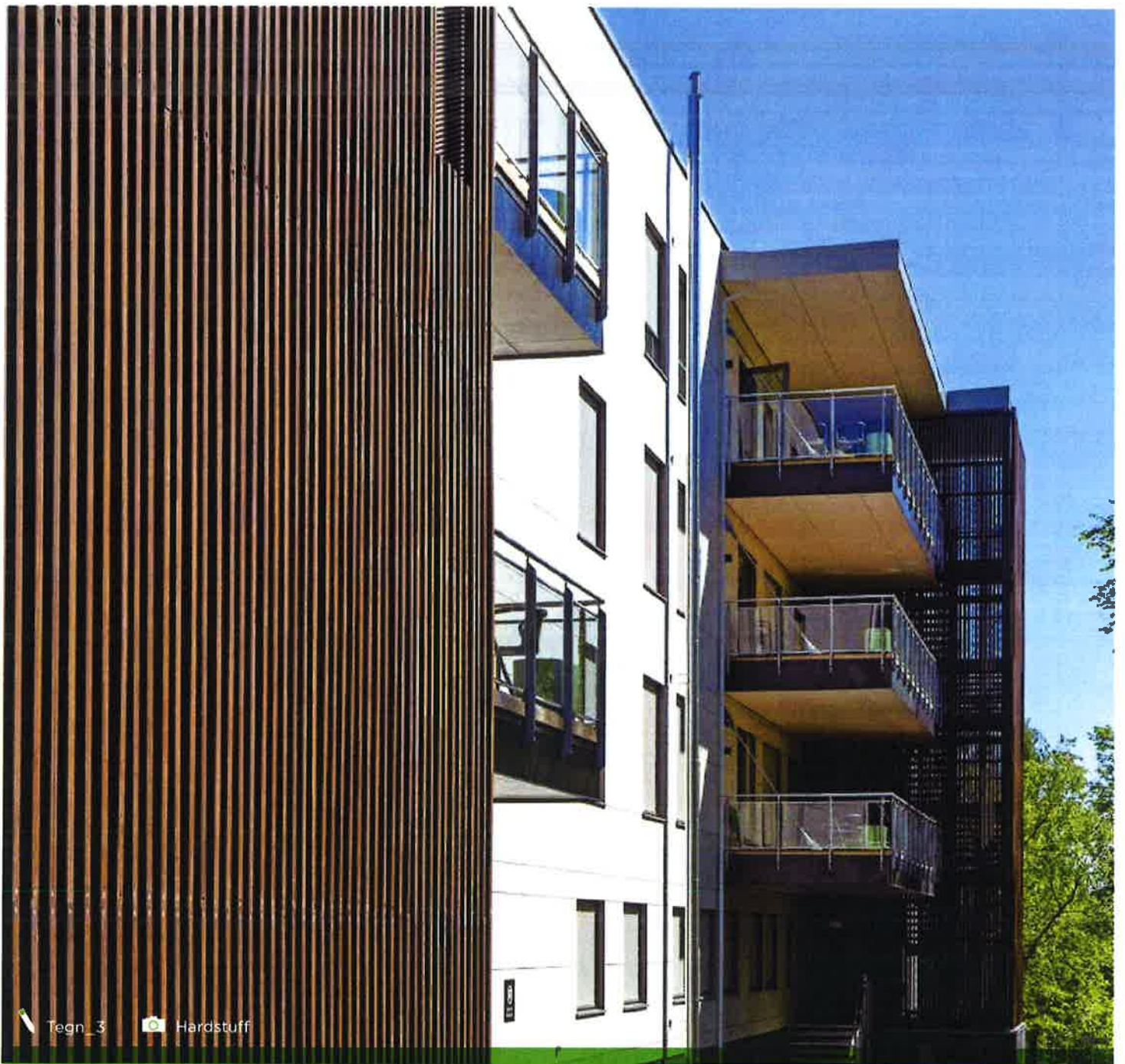
The special Thermo-Density® process increases the density from 650-700 kg/m³ to approx. 1.150 kg/m³, significantly improving the hardness of this product. After pressing, the material is stronger and harder than almost any other hardwood in the world. That is why we call it: **MOSO® Bamboo X-treme®**.

Only with MOSO® Bamboo X-treme® can you be sure to have the original, unique product. Other products that copy the original do not offer the same hardness and level of durability, dimensional stability and ecology. With a look-alike product, there is a large risk of claims after installation. Always ask for the original, certified MOSO® Bamboo X-treme® products!

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



range of durability results



Tegn_3 Hardstuff

Bo-og Nursing Home
(11,300 m²) Oslo, Norway



Sabbagh Arquitectos Hunter Douglas Chile

Catholic University Lira Offices
(1,200 m²) Santiago de Chile, Chile



Florlade Outdoor Furniture
Almere, The Netherlands