

# MOSO® Bamboo X-treme® Varibo Outdoor Cladding

## Grad® profile

MOSO® Bamboo X-treme® Grad® Cladding are solid boards in various widths for exterior applications. The boards are made from bamboo strips that have been compressed and thermally modified at 200°C. This unique Thermo-Density® process provides Bamboo X-treme® with the highest durability class possible in the appropriate EU norms, increases the stability and density, and consequently the hardness. MOSO® Bamboo X-treme® Grad® Cladding is designed for installation on the Grad® demountable and hidden installation system. Contrary to wood products, this material can achieve fire resistance without impregnation with expensive and eco-damaging fire retardants. The Closed profile achieves the fire resistance Class B-s1-d0<sup>1)</sup> (EN 13501-1) with the Grad® installation system. Like any tropical hardwood species, when exposed to outdoor conditions, Bamboo X-treme® will turn grey over time creating a very natural look.



Product Code	Profile	Finish	Surface	End-matched	Length edges	End edges	Effective width (mm)*	Dimensions (mm)
BO-DTHT1180-BG	Grad®	Unfinished	Flat	No	R3	2mm x 45°	45	1850x45x20
BO-DTHT1190-BG	Grad®	Unfinished	Flat	No	R3	2mm x 45°	64	1850x64x20
BO-DTHT220-BG	Grad®	Unfinished	Flat	No	R3	2mm x 45°	119	1850x119x20
BO-DTHT540-1-BG	Grad®	Unfinished	Flat	Yes	R1	2mm x 45°	136	1850x136x20

\* Effective width without gap between the boards, distance after installation on Grad® system 6 mm (except for Closed profile).

### Installation

- Installation instructions are available from MOSO®: [▶www.moso-bamboo.com/cladding/grad](http://www.moso-bamboo.com/cladding/grad)
- MOSO® guarantees the bamboo material and the mounting materials (fastener/screw) it supplies but does not guarantee the connection with other materials (such as sub frame joist/battens). It is the responsibility of the installer to make sure the used installation method matches such materials during the full lifetime of the product.
- Store in a cool and dry place away from direct sunlight, and protected from weather influences, dirt and dust.
- Installation instructions for the Grad® installation system are available from Grad®: [▶www.gradconcept.com](http://www.gradconcept.com)

Flat Rail



### Technical characteristics and certifications

- Density: ± 1150 kg/m<sup>3</sup>
- Dimensional stability: length: + 0.1 %; width: + 0.9% (24 hours in water 20°C)
- Resistance to Indentation - Brinell Hardness: ± 9.5 kg/mm<sup>2</sup> (average value - EN 1534)
- Reaction to fire: Class B-s1-d0 (EN 13501-1)<sup>1)</sup>
- Flame spread index: Class A (ASTM E84)
- Thermal emittance: 0.81 (ASTM C1371)<sup>2)</sup>
- Solar Reflectance (SR): 0.32 (ASTM C1549)<sup>2)</sup>
- Solar Reflectance Index (SRI): Low 27, Medium 30, High 33 (ASTM E1980)<sup>2)</sup>
- Modulus of Elasticity: 13565 N/mm<sup>2</sup> (mean value - EN 408)
- Bending strength: 54.4 N/mm<sup>2</sup> (characteristic value - EN 408)
- Biological durability: Class 1 (EN 350 / CEN/TS 15083-2), simulated graveyard test / Class 1 (EN 350 / CEN/TS 15083-1)
- Effectiveness against Blue Stain: Class 0 (EN 152)
- Effectiveness against European Termites: Class M (EN 350 / EN 117 - Coptotermes gestroi)
- Use Class: Class 4 (EN 335)
- CO<sub>2</sub> neutral: LCA report TU Delft (ISO 14040/44) ([www.moso-bamboo.com/lca](http://www.moso-bamboo.com/lca))
- Environmental Product Declaration - EPD (EN 15804) ([www.moso-bamboo.com/epd](http://www.moso-bamboo.com/epd))
- FSC®: Products available with FSC® certification on request.
- Contribution LEED BD+C - v4: MR 1, MR 2, MR 3 (FSC®), SS 7 v2009: MR 6, MR 7 (FSC®)
- Contribution BREEAM: MAT 1, MAT 3 (FSC®), MAT 5 (HD)
- Guarantee: 25 years

<sup>1)</sup> Tested on 18 mm thickness, without gaps between boards, with ventilation space behind boards.

<sup>2)</sup> Tested on 3 years weathered MOSO® Bamboo X-treme®.



Also available with FSC® certification.



bream