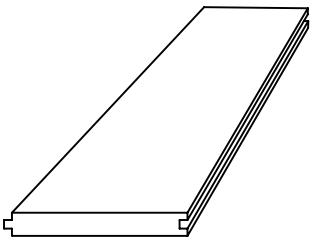
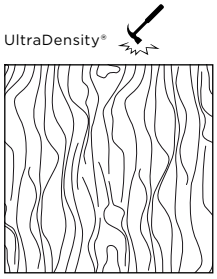
# **MOSO® bamboo** ultradensity® **flooring**

(for semi-outdoor high traffic areas for installation with MOSO® Bamboo X-treme® sub beams)

MOSO® Bamboo UltraDensity® is a solid bamboo flooring board made from compressed bamboo strips with an Ultra-High Density®. Thanks to its unique production method the material is extremely stable, hard and durable and therefore suitable for the toughest conditions: in very high traffic areas and even in semi-outdoor areas (protected from direct rain or sunshine). The boards are available unfinished, with rough sanded faces and have to be finished on site. The boards come with tongue and groove and a bevel on all 4 sides. This flooring type has to be installed screwed down on MOSO® Bamboo X-treme® sub beams or alternative sub beams.






**UD**: UltraDensity®, **B**: Bevel

| Caramel | Style | Finish | Edges | Dimensions (mm) |
|---|---|---|---|---|
| BF-DS1060 | UD | - | B | 1900x160x32 |
| BF-DS2060 | UD | - | B | 1900x160x20 |

**ATEc 12/19-1784_V1, issued on 17. September 2019, by the CCFAT (French Commission in charge of issuing Technical Certification) with reference to a use in premises classified U4P4E2C2.**

**Tested by the FCBA (French Wood Institute).**

The full MOSO® Bamboo UltraDensity® flooring system, to be installed on MOSO® Bamboo X-treme® sub-beams, with peripheral joints and surface finishing with Woca Diamond Oil Active (Woca N°1) products, is intended for installation in premises classified up to $U_4P_4E_2C_2$ within the loading limits corresponding to this classification*. This Technical field has been registered at CSTB under the number ATEx 2385.

* (see Note on UPEC classification and UPEC classification of premises, e-CSTB n° 3782v2 of November 2004) Installation takes place on new or existing substrates made of concrete or cement mortar taking into account the humidity and flatness conditions defined in NF DTU 51.2. Wood-based substrates and screeds containing calcium sulfate are excluded. The use of this method is limited to Class 2 (according to Eurocode 5) and Class of use 3.1 (according to EN 335).

## **installation summary** (full version available on www.moso.eu/ultradensity)

- Install a PE (Polyethylene) film as moisture barrier.
- Install a suitable, fixed, stable and durable sub frame, preferably using Bamboo X-treme® sub beams. Distance between the beams: see table 'field of use' (page 7).
- Always make sure the end of the board is supported by a joist.
- Maximum length/width of the floor 100 m / 15 m.
- Fix the boards on the sub frame screwing into the tongue of the board at a 45° angle. Always predrill before screwing.
- After cleaning and drying, apply an appropriate finish (Woca Diamond Oil Active (Woca N°1) is advised for heavy traffic areas).
- After installation: make sure proper cleaning and maintenance is done, according to the chosen finish.
- For further information: please see the installation and maintenance instructions.

## **technical characteristics and certifications**

- Density (product): +/- 1150 kg/m³
- Composition: 93% bamboo strips (lignin/cellulose) and 7% glue (outdoor resistance).
- Top layer thickness / Wear layer: approx. 7 mm for the 20 mm boards / 11 mm for the 32 mm boards
- Dimensional stability: Results conform to French standard NF B 54008 (ISO 24339).
- Resistance to Indentation – Brinell Hardness: ≥ 9.5 kg/mm² (EN 1534)
- Reaction to fire [1]: Class Bfl-s1 (EN 13501-1)
- Slip resistance [1]: USRV 118 (EN 13036-4), R 10 (CEN/TS 16165 Annex B - DIN 51130)
- Formaldehyde emission: Class E1 (< 0.124 mg/m³, EN 717-1), Class E0 (< 0.025 mg/m³) [2]
- Emission of VOC: A+ (ISO 16000-9)
- Modulus of Elasticity: 12610 N/mm² (EN 408)
- Breaking strength: 95.5 N/mm² (EN 310)
- Biological durability: Class 2 (EN 350 / CEN/TS 15083-1)
- Use class: Class 3.1 (EN 335 / EN 460)
- UPEC classification according to French standard: Class $U_4P_4E_2C_2$ [1]
- $CO_2$ neutral: LCA report TU Delft (ISO 14040/44) (www.moso.eu/lca)
- Environmental Product Declaration - EPD (EN 15804) (www.moso.eu/epd)
- Contribution LEED BD+C - v4: MR 1, MR 2, EQ2 v2009: MR 6, IEQ 4.4
- Contribution BREEAM: HEA 2, MAT 1, MAT 5
- Guarantee: 30 years

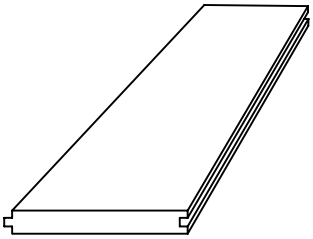
[1] Only when finished with Woca Diamond Oil Active (WocaN°1) oil.
[2] E0 Class is an unofficial formaldehyde emission class, but it is commonly used to indicate that the product has a very low emission, not detectable (n.d.) emission or is produced with No Added Formaldehyde (NAF) glues. E0 products automatically qualify for the official E1 Class according EN 717-1.

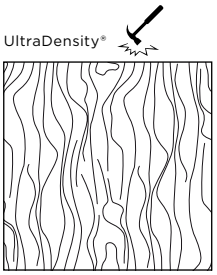
CE Class 2 (CEN/TS 15083-1) EN350 · Class 3.1 EN335 · $B_{fl}$-s1 · E0 HCHO · $CO_2$ NEUTRAL · EPD EN15804 · 30 YEARS GUARANTEE · ÉMISSIONS DANS L'AIR INTÉRIEUR A+ A+ A B C · LEED · breeam

# **MOSO® bamboo** ultradensity® **flooring**

(for high traffic areas for installation with glue)

MOSO® Bamboo UltraDensity® is a solid bamboo flooring board made from compressed bamboo strips with an Ultra-High Density®. With its unique production method the material is extremely stable, hard and durable and therefore suitable for high traffic areas. The boards are available unfinished, and have to be finished on site. The boards come with tongue and groove and a bevel on all 4 sides. This flooring type has to be fully glued down.






**UD**: UltraDensity®, **B**: Bevel, **MB**: Micro bevel

| Caramel | Style | Finish | Surface | Edges | Dimensions (mm) |
|---|---|---|---|---|---|
| BF-DS2060 | UD | - | Roughly sanded | B | 1900x160x20 |
| BF-DS2061 | UD | - | Smooth sanded | MB | 1900x160x18 |

## installation summary (full version available on www.moso.eu/ultradensity)

- Check room climate conditions (room temp. 18-21°C, air humidity 40-65%).
- Check subfloor: it should be flat/clean/stable and should not exceed the maximum allowed moisture content (for example 1.8% for sand cement).
- The floor should be fully glued.
- MOSO® Bamboo UltraDensity® itself can be installed glued down without expansion gap/joint, but with minimum 10 mm distance from the wall. When the building, where the floor will be installed, requires expansion gaps (for example in concrete subfloors), these expansion gaps needs to be taken over and also be made in the MOSO® Bamboo UltraDensity® floor.
- Elastic adhesive systems like 1-component Polyurethane or silan type of adhesives only can be used, when:
  - Shear strength Ts > 1.4 N/mm²
    (3 days balanced at 23 degrees Celsius/50% Air Humidity)
  - Shear elongation y >=0.5
    (3 days balanced at 23 degrees Celsius/50% Air Humidity)
- Please ask your glue supplier for more information.
- After cleaning and drying, apply an appropriate finish (Woca Diamond Oil Active (Woca N°1) is advised for heavy traffic areas).
- This floor type can be installed – under certain conditions – on floor heating / cooling.

## technical characteristics and certifications

- Density (product): +/- 1150 kg/m³
- Composition: 93% bamboo strips (lignin/cellulose) and 7% glue (outdoor resistance)
- Top layer thickness / Wear layer: approx. 7 mm
- Dimensional stability: Results confirms to French standard NF B 54008 (ISO 24339)
- Resistance to Indentation – Brinell Hardness: ≥ 9.5 kg/mm² (EN 1534)
- Reaction to fire [1]: Class Bfl-s1 (EN 13501-1)
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- Emission of VOC: A+ (ISO 16000-9)
- Biological durability: Class 2 (EN 350 / CEN/TS 15083-1)
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- UPEC classification according to French standard: Class $U_4P_4E_2C_2$ [1]
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- Contribution LEED BD+C - v4: MR 1, MR 2, EQ2 v2009: MR 6, IEQ 4.4
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- Guarantee: 30 years

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