



WE DO BAMBOO
THE AFRICAN BAMBOO COMPANY

Technical Data Sheet

BAMBOO COMPOSITE (BPC)

Decking, Cladding & Architectural Profiles

Preliminary technical information for current homogeneous single-layer production. Values remain subject to further testing, certification and product development.

Resin system
Recycled HDPE

Production
Homogeneous extrusion

Origin
Nairobi, Kenya

Version 2.1 | February 2026
We Do Bambusa Ltd - Nairobi, Kenya

Document status

This document provides indicative technical information and does not constitute a certified technical datasheet. Values are subject to change following further testing, certification and product development.



Product & Material

We Do Bambusa Ltd manufactures high-density Bamboo Plastic Composite (BPC) profiles for architectural and construction applications. Products include decking, cladding, wall panels and custom profiles, produced at our facility in Nairobi, Kenya using locally sourced bamboo combined with recycled HDPE.

BPC encapsulates bamboo fibres within a polymer matrix, delivering a durable, dimensionally stable profile suitable for indoor and outdoor use. Resistance to moisture, biological attack and UV degradation is achieved through the polymer encapsulation itself, without chemical preservative treatments.

Current production configuration

All profiles are currently produced as fully homogeneous single-layer extrusions. Co-extrusion capability is planned once the co-extruder is commissioned. All specifications in this document reflect current homogeneous production.

Material composition

In homogeneous production, the entire profile consists of a single extruded compound. Structural filler, polymer matrix, UV stabilisation, colour pigments and processing additives are uniformly distributed throughout the full cross-section. There is no separate surface skin or cap layer.

Additive	Function	Loading
Compatibilizer XR335	Improves adhesion between bamboo fibre and HDPE matrix	3.5-4.0 kg / 150 kg
Lubricant LM	Processing aid; reduces barrel friction and improves surface finish	2.2-2.5 kg / 150 kg
UV Absorber UV531	UV stabiliser; prevents photodegradation and colour fade throughout profile	3.0 kg / 150 kg
Antioxidant 1010 + 168	Thermal oxidation protection during extrusion and service	~3.0 kg blend
Antiseptic	Anti-fungal and anti-mould protection	Trace
Calcium Carbonate	Filler; modifies density and surface hardness	15-30 kg / 150 kg
Pigments	Colour formulation throughout full profile section	Variable

Standard batch size: 150 kg. Seven colour variants are currently in production.



Formula & Resin System

All figures below are kilograms per 150 kg batch. Pigment loadings vary by colour target.

Product	Bamboo	Ca	HDPE	XR335	LM	UV531	AO	Y	R	B
Natural Teak	65	15	35	3.5	2.2	3	3	2.6	1.78	0.1
Savanna Gold	60	30	30	4	2.5	3	3	3	1	0
Dark Espresso	60	30	30	4	2.5	3	3	0.7	1.9	1.2
Natural Sand	60	30	30	4	2.5	3	3	3	0	0
Natural Sand-02	60	30	30	4	2.5	3	3	0	0	0
Chocolate Brown	60	30	30	4	2.5	3	3	2.5	1	0.25
Natural Oak	60	30	30	4	2.5	3	3	3	0.5	0

XR335 = compatibilizer; LM = lubricant; UV531 = UV absorber; AO = antioxidant blend (1010 + 168). Antiseptic is used at trace levels across all variants.

Resin & binder system

The matrix resin is recycled HDPE (High Density Polyethylene). No virgin plastics, phenolic resins, urea-formaldehyde or other added formaldehyde binders are used. Bamboo fibres are bonded mechanically within the HDPE matrix, assisted by the compatibiliser XR335 which improves interfacial adhesion between the hydrophilic bamboo surface and the hydrophobic polymer.

PP (Polypropylene) may be used as an alternative or supplement to HDPE depending on available recycled material stock, though HDPE is the standard resin system.

Planned co-extrusion configuration

When the SJ45/30 co-extruder is commissioned, a dedicated surface cap layer (approx. 0.17-0.37 kg/m depending on profile) will carry colour pigments and elevated UV stabiliser loading. Profile weights, cost structure and surface performance characteristics will change accordingly.



Manufacturing & Profiles

Stage 1 - Compounding

- Bamboo crushed, milled and dried to below 3% moisture
- 500 kg/h hot-cold mixer system
- SJ75B parallel twin-screw extruder
- Controlled shear, temperature and vacuum devolatilisation
- Air-cooled, pelletised and vibration-screened

Stage 2 - Profile extrusion

- SJZ65/132 conical twin-screw extruder
- Profile-specific die and vacuum calibration tooling
- 4 m cooling bath, haul-off and cut-to-length
- Standard cut length: 2.8 m per board
- Wire drawing, sanding or embossing options

Product profiles & linear weights

Code	Dimensions	Profile type	Linear weight
NO1	140 x 20 mm	Solid	3.77 kg/m
NO2	140 x 25 mm	Hollow	2.25 kg/m
NO3	150 x 23 mm	Hollow	2.64 kg/m
NO4	150 x 25 mm (7-hole)	Hollow	2.79 kg/m
NO6	154 x 21 mm	Cladding / hollow	1.41 kg/m
NO7	205 x 23 mm	Balustrade / hollow	2.77 kg/m
NO8	219 x 26 mm	Panel / hollow	2.54 kg/m

Weights reflect homogeneous production and are based on cross-sectional area calculations at an approximate material density of 1,350 kg/m³.



Physical & Mechanical Performance

Property	Typical value	Notes
Density	1,100-1,350 kg/m ³	Higher calcium content increases density
Water absorption (24h)	<1-2%	Polymer encapsulation limits uptake
Swelling	Minimal	Significantly lower than natural wood
Thermal resistance	0.05-0.10 m ² K/W	Indicative; not yet formally tested
Thermal expansion	0.03-0.05% per 10°C	Allow expansion gaps at installation

Mechanical performance

Property	Indication
Surface hardness	Comparable to hardwood; bamboo content provides rigidity
Resistance to cracking	Good; polymer matrix absorbs impact without fracture
Resistance to splintering	No splintering; thermoplastic matrix is continuous
Scratch visibility	Scratches do not reveal a different colour underneath (homogeneous advantage)
Machining	Carbide-tipped saws and drills recommended

Dimensional stability

Parameter	Value
Thermal expansion coefficient	0.03-0.05% per 10°C
Expansion gap	5-8 mm per metre of length
Perimeter gap	10-15 mm
Moisture movement	Significantly lower than solid wood

Performance statement

Hardness is comparable to hardwood decking. Profiles are suitable for residential and commercial pedestrian loading. The homogeneous structure means mechanical properties are uniform through the full cross-section.



Surface, Weathering & Use

Surface finish & slip resistance

Surface texture is applied by online embossing, wire drawing or brushing as a post-extrusion step. Slip resistance depends on the texture applied.

Condition	Typical rating (DIN 51130)
Dry	R11-R12
Wet	R10-R11

Formal DIN/EN testing available upon request prior to project specification.

UV resistance & weathering

Parameter	Indication
UV stabiliser system	UV531 absorber at ~2 wt%, supported by antioxidant 1010 + 168 blend
UV protection depth	Full cross-section in homogeneous production; not surface-limited
Initial colour stabilisation	8-12 weeks post-installation
Post-stabilisation colour change	Significantly reduced compared to untreated wood
Greying tendency	Minimal; polymer matrix does not silver the way timber does

Fire performance

Euroclass testing (EN 13501-1) has not yet been completed. Based on composition and industry benchmarks for comparable BPC/WPC products without fire retardants, typical classification is expected to be Class C-D. Fire-retardant formulations are available on a project basis and require independent testing.

Emissions & indoor air quality

No added formaldehyde is used in production. No phenolic binders. Expected compliance with E1 emission levels; potential for E0 classification. Third-party EN testing is planned ahead of EU market entry.



Installation, Sustainability & Documentation

Installation guidelines

Area	Guidance
Fixation	Compatible with hidden clip systems; A2/A4 stainless steel fasteners for perimeter and face fixation
Adhesives	PU-based or silane-modified polymer (MSP) adhesives where bonding is required; adhesive must remain flexible and suitable for composite substrates
Underfloor heating	Suitable for indoor systems; maximum recommended surface temperature: 27°C

Use this document together with the current We Do Bamboo Installation Guide and project-specific drawings.

Sustainability

Bamboo is a rapidly renewable resource, grown and harvested in Kenya without clear-felling. The plastic component is sourced from post-consumer recycled HDPE, reducing reliance on virgin petrochemical feedstock. No tropical hardwoods are used.

FSC certification applies to bamboo sourcing where applicable. The composite end product is not FSC-certified. EPD and LCA documentation will be developed once production volumes justify the investment. Products may contribute to BREEAM and LEED credits depending on project assessment.

Documentation status

Document	Status
Preliminary Technical Data Sheets (TDS)	Available
Material Safety Data Sheets (MSDS)	Available
Official Production Recipes	Finalised - February 2026
CE / Euroclass (EN 13501-1) Testing	Planned
EPD / LCA	Planned
Third-party emission testing (EN)	Planned
Co-extrusion capability	Planned - not yet commissioned

Warranty summary

Warranty covers structural integrity and manufacturing defects. Warranty terms are application-dependent and require installation in compliance with We Do Bambusa published guidelines. Full warranty documentation is available upon request.

Disclaimer

This document reflects the production configuration as of February 2026. All profiles are currently produced as fully homogeneous single-layer extrusions. Co-extrusion specifications and weights will be issued in a revised version once that configuration is commissioned and validated. Values are indicative and subject to change following testing and certification.