

Natural Durability & Refined Aesthetic with Thermal Modification

1. PRODUCT DESCRIPTION

Thermowood Iroko is a high-performance, environmentally friendly timber produced from West African-origin *Iroko* (*Chlorophora excelsa*) through a specialized heat and steam modification process. Performed at temperatures between **180–212°C**, this process alters the wood's internal structure by extracting its natural extractives, without the use of any chemicals. The result is a 100% natural thermally modified Iroko with enhanced durability and dimensional stability.

2. GENERAL CHARACTERISTICS

Property	Specification
Wood Name	Iroko
Botanical Name	<i>Chlorophora excelsa</i>
Origin	West, Central, and East Africa
Treatment Type	Thermal Modification
Process Temperature	180–212°C
Density (Before/After)	660–690 kg/m ³ → 550–650 kg/m ³
Color (Before/After)	Light amber → Caramel to dark golden tones
Moisture Content (After)	4–7%
Thermal Conductivity (λ)	0.099 W/m·K
Durability Class	Class 1 (Very Durable)
Modulus of Elasticity (MOE)	10,420 – 13,550 N/mm ²
Bending Strength (MOR)	55 – 60 N/mm ²
Hardness (Brinell)	~40 N/mm ²

3. KEY BENEFITS OF THERMAL MODIFICATION

- 100% natural, no chemical treatments
- Reduced water absorption, high dimensional stability
- Up to **90% less cracking, warping, and distortion**
- Uniform, rich color tone for improved surface aesthetics
- Naturally resistant to fungi, insects, and termites
- Enhanced thermal and sound insulation performance
- Eco-friendly, low carbon footprint, and FSC-certified source availability

4. PHYSICAL PROPERTIES

Property	Value
Moisture Content	4–7%
Dimensional Stability	Very High
Radial Shrinkage	~2–3%
Tangential Shrinkage	~4–5.2%
Volumetric Shrinkage	~11%
Thermal Expansion	Low
Thermal Conductivity (λ)	0.099 W/m·K

5. APPLICATION AREAS

Thermowood Iroko is suitable for all projects seeking long-lasting, natural timber aesthetics.

Exterior Applications:

- Façade cladding
- Decking systems
- Pergolas and veranda structures
- Garden furniture
- Ship decks

Interior Applications:

- Flooring and parquet
- Stair treads
- Furniture and panel production
- Decorative joinery

6. WORKABILITY & INSTALLATION

- Easy to work with using standard woodworking tools
- Stainless steel screws and fasteners recommended
- High bonding strength with **MUF** and **polyurethane adhesives**
- Compatible with both oil-based and water-based finishes
- Suitable for **finger-jointed, laminated, and solid profiles**

7. MAINTENANCE & STORAGE

- Regular exterior oil maintenance recommended
- Naturally weathers to a silver-grey patina over time — a natural ageing process
- Should be stored in dry, cool, and shaded environments

8. ENVIRONMENTAL IMPACT & SUSTAINABILITY

- 100% natural, chemical-free product
- Fully recyclable and biodegradable
- Manufactured with low energy consumption
- Available from **FSC-certified sustainable forests**
- Low carbon footprint

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