



Technical Specifications & Performance Standards for Underfloor Heating Compatible Solid Wood (Hinoki)

This report provides comprehensive technical specifications, performance characteristics, and finish options for our 15mm solid hinoki heated flooring system. All specifications detailed herein refer exclusively to the 15mm thickness product, which represents the optimal configuration for underfloor heating applications.

1. Technical Performance Standards

Regulatory Framework

Wooden heated flooring systems in Japan operate under performance standards established by major utility companies, primarily Tokai Gas and Kansai Electric. These industry-led standards serve as the de facto national benchmark due to these organizations' extensive infrastructure networks and decades of experience with underfloor heating systems.

Heat Resistance and Dimensional Stability

Our solid hinoki heated flooring system meets the following performance criteria:

Heat Resistance Testing:

- 1,100 hours of continuous exposure at 60°C
- Includes repeated thermal cycling (on/off heating) to replicate actual operating conditions

Dimensional Stability:

- Tongue-and-groove joint movement restricted to less than 1mm under test conditions
- This threshold ensures long-term structural integrity and maintains tight joints throughout the product lifespan

Performance Implications: The testing protocol confirms the flooring will tolerate sustained heat levels significantly above normal residential operating temperatures, providing a substantial safety margin for both hydronic and electric heating systems.

Manufacturing Precision

Production processes incorporate rigorous quality controls:

- Material removal and dimensional changes are precisely monitored during machining
- Weight variations (measured in grams) are tracked against thickness changes to ensure consistency
- The 15mm thickness provides optimal balance between stability and heat transfer efficiency

Construction Features

- **End-matched boards:** Improves load distribution, installation accuracy, and long-term stability under thermal cycling
- **Product dimensions:** 1818mm × 80mm × 15mm
- **Packaging:** Supplied in protective cardboard boxes

2. Appearance Grades and Selection

Three appearance grades are available, all in 15mm thickness. Pricing differences reflect selection criteria and manufacturing yield rather than thickness variation.

Grade 1: Mubushi / Muji (Clear / No Knots)

- Completely knot-free surface
- End-matched board construction
- Grain direction and flow carefully selected for visual continuity
- Creates a calm, refined aesthetic
- **Recommended for:** Projects prioritizing visual consistency, architectural clarity, and minimalist design

Grade 2: Jokobushi / Joko (Minimal Knots)

- Minimal knot presence; when present, knots remain visible
- Knots may measure approximately 6mm or larger
- Loose knots filled with umeki (traditional wood plugs)
- **Recommended for:** Projects seeking natural character with moderate visual control

Grade 3: Fushi-Ari (Knotty)

- Natural knots are characteristic of this grade
- Loose knots filled with umeki
- Visually expressive with natural wood character
- **Recommended for:** Projects emphasizing rustic or traditional aesthetics

Thickness Recommendation

The 15mm thickness is strongly recommended for heated flooring applications. While priced equivalently to the 12mm option, the additional mass provides:

- Enhanced stability under thermal cycling
- Improved long-term performance
- Maintained heat transmission efficiency

3. Factory-Applied Finishes

All flooring is pre-finished in Japan under controlled manufacturing conditions, ensuring consistent quality and immediate installation readiness upon delivery.

Option 1: Natural Oil Finish (Beeswax Finish)

- **Composition:** Pure beeswax and perilla oil
- **Application:** Undiluted, no thinning agents or volatile solvents
- **Characteristics:**
 - Penetrates wood fibers for excellent water and stain resistance
 - Enhances natural luster and texture of hinoki
 - Preserves characteristic hinoki aroma
 - Maintains wood's natural breathability

Option 2: Urethane Coating

- **Application:** Factory-applied for maximum consistency
- **Characteristics:**
 - Provides durable, sealed surface
 - Maintains refined appearance
 - Enhanced surface protection

Both finishes undergo quality-controlled application in Japan, guaranteeing immediate installation readiness upon arrival.

4. Installation Strategy: Mixed Heating Zones

To optimize system efficiency and reduce installation costs, we recommend a zoned approach:

Heated Zones

Install heated flooring in areas with direct foot contact:

- Primary living areas
- Walking paths and circulation routes
- Seating and gathering zones

Non-Heated Zones

Use standard solid hinoki flooring beneath:

- Fixed furniture and cabinetry
- Kitchen appliances
- Storage units and built-in elements

Visual Continuity: Non-heated solid hinoki products with matching dimensions are available, enabling seamless transitions between heated and non-heated zones while maintaining aesthetic consistency throughout the space.

5. Logistics and Shipping

For international shipments, temperature-controlled (reefer) containers are recommended to maintain thermal and moisture stability during transit. This ensures the product arrives in optimal condition for installation.

Manufacturer Credentials

This heated flooring system is produced by a specialized manufacturer recognized for technical expertise in solid-wood heated flooring applications. Their long-term compliance with utility-industry standards, comprehensive testing protocols, and manufacturing precision reflects deep specialization in thermally-active wood flooring systems.

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