

Technical Data and General Information

Lamboo Engineered Bamboo Material Mechanical Properties

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| <p><u>Compression:</u></p> <p>ASTM-D198-13 SEC 29-36</p> <p>ASTM 3501-86</p> | <p>PARALLEL TO GRAIN: 8,252 PSI</p> <p>PERPENDICULAR TO GRAIN: 2,880 PSI</p> |
| <p><u>Tensile Strength:</u></p> <p>ASTM-D198-13 SEC 29-36</p> <p>ASTM 3500-90</p> | <p>PARALLEL TO GRAIN: 8,810 PSI</p> <p>PERPENDICULAR TO GRAIN: 700 PSI</p> |
| <p><u>Flexural Strength:</u></p> <p>ASTM-D198-13 SEC 4-12</p> | <p>11,250 PSI</p> |
| <p><u>Shear Strength:</u></p> <p>ASTM D3048</p> | <p>2,910 PSI</p> |
| <p><u>Modulus of Elasticity:</u></p> <p>ASTM D1037</p> | <p>1.3 x 10⁶ or 1,300 KSI</p> |
| <p><u>Thermal Properties</u></p> <p>Thermal Conductivity:</p> <p>R-Value:</p> <p>U-Value:</p> | <p>K=.352</p> <p>0.720</p> <p>1.040</p> |
| <p><u>Specific Gravity:</u></p> | <p>0.60—0.62</p> |
| <p><u>Density:</u></p> | <p>42-44 Lbs./Ft³</p> |
| <p><u>Janka Hardness Test:</u></p> <p>ASTM 1037</p> | <p>1,900 LBF</p> |
| <p><u>Dimensional Stability Coefficient:</u></p> <p>Volumetric Stability Factor:</p> <p>Linear Expansion: (ASTM D1037) - 20% RH</p> <p>Perpendicular Expansion: (ASTM D1037)</p> | <p>0.00144</p> <p>-0.04%</p> <p>-0.10%</p> |



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| <p><u>Moisture Content:</u></p> <p>Solid Engineered Lamboo: (ASTM D4442)</p> | <p>9% to 13%</p> |
| <p><u>Flammability:</u></p> <p>ASTM E84 - Surface Burn Test</p> | <p><u>Stock Products</u></p> <p>Class "B" - Flame Spread Index: 60 Smoke Index Development: 68</p> <p><u>Pressure Treated Products</u></p> <p>Class "A" - Flame Spread Index: 20 Smoke Index Development: 65</p> |
| <p><u>Termite Resistance Test:</u></p> <p>ASTM D3345-17</p> | <p>Passed - (considered termite proof)</p> |

Recommended Storage Procedures:

- **Minimize Handling** - To reduce potential damage to materials, minimize handling and utilize team lifting procedures.
 - **Proper Stacking** - Materials should be stored flat on raised blocking of equal thickness and spacing. Recommended spacing for spacers is every 12 to 24 inches.
 - **Ground Contact** - Do not stack unfinished/finished materials directly on ground or concrete.
 - **Storage Location and Temperature** - Store packaged and unpackaged materials **inside** or in a **covered shelter** between 55° F to 75° F and 45% to 55% Humidity.
 - **Sunlight** - Avoid storing packaged and unpackaged materials in direct sunlight for long periods of time as materials will become heated and could potentially stick to separate paper or packaging material.
 - **Acclimation** - Materials should be allowed to acclimate to the installation environment and humidity prior to installation. Recommended acclimation time is 48 to 72 hours. Finished Materials should be removed from packaging and allowed to acclimate 48 to 72 hours prior to installation.
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Fasteners and Clipping Systems:

- **Fasteners** - Aluminum (Interior) and Stainless Steel (exterior) bolts, washers, and nuts, or self-tapping screws are recommended. Pre-drilling is recommended if self-tapping screws are not used. Pre-drilling will help prevent cracking and splitting of the materials and offer superior service life and eliminate chemical reaction or staining of the materials.
- **Clips and Hidden Fasteners** - Lamboo offers clipping and hidden fastener systems for all types of product applications. Please contact Lamboo directly to speak with a technical product specialist in regards to the best system to utilize for your project.
- **Coated Fasteners** - It is **not** recommended to use coated fasteners as coating will leak/seep into bamboo materials.

Exterior Mounting:

- **DO NOT GLUE OR ADHERE LAMBOO MATERIALS DIRECTLY TO STEEL, CONCRETE, OR OTHER WOOD SURFACES IN EXTERIOR APPLICATIONS!**
- Only Face –Fasten or approved mounting hardware by Lamboo for exterior applications should be used. Contact Lamboo directly with any questions about recommended fastening techniques and hardware.
- Any cutting, drilling, or alterations made to finished materials must be sealed prior to installation. Failure to do this will cause potential water penetration under coating/finishes.

Recommended Tooling and Fabrication Methods:

- Cutting and Tooling** - Lamboo cuts and tools well with standard woodworking tools. For best results, use sharp high-carbide tipped tooling to help prevent tear-out. When cross-cutting, it is recommended to use high tooth count blades. Lamboo machines very well parallel to the grain. Just as plywood, Lamboo can splinter when crosscutting, coping, and tenoning across the end grain. Due to the linear fibrous nature of Lamboo, do not try to snap off uncut pieces; cut or sand them off. Pulling tear-out or splintered Lamboo could cause a “run” along the length of the grain. Profiles can be easily routed. Use typical woodworking practices when surfacing Lamboo materials. Please see the following table providing recommended saw blades for cutting Lamboo materials.

| <u>TYPE OF SAW:</u> | <u>APPLICATION:</u> | <u>DIAMETER:</u> | <u>TEETH:</u> | <u>HOOK:</u> | <u>KERF:</u> | <u>ARBOR:</u> |
|--|--|-------------------|----------------------|------------------|-------------------------|--------------------|
| Table Saw (over 3 HP) | Ripping | 10" | 24 ATB 30 TCG | 20° 12° | .126" .118" | 5/8" 5/8" |
| | Cross-cutting | 10" 12" | 80 ATB 96ATB | 10° 10° | .116" .116" | 5/8" 1" |
| | Combination (Ripping / Cross-cutting) | 10" 12" | 50 COMB. 60 COMB. | 10° 10° | .126" .126" | 5/8" 1" |
| | Cross-Ply Materials | 10" | 80 TCG 80 HiATB | -3° 2° | .126" .126" | 5/8" 5/8" |
| Sliding Compound Miter Saw/Radial Arm Saw | Cross-Cutting General Cutting | 8" | 48 ATB | -5° | .090" | 5/8" |
| | | 10" 12" | 60 ATB 72 ATB | -5° -5° | .090" .090" | 5/8" 1" |
| | Extra-Fine Cross-Cutting Cross-Ply Materials | 10" 10" 12" | 80HiATB | 2° -5° -5° | .091" .109" .109" | 5/8" 5/8" 1" |
| Compound Miter Saw | Cross-Cutting General Cutting | 8" | 64 ATB | 10° | .116" | 5/8" |
| | | 10" 12" | 80 ATB 96 ATB | 10° 10° | .116" .116" | 5/8" 1" |
| | Extra-Fine Cross-Cutting Cross-Ply Materials | 10" 12" | 80 ATB 96 HiATB | 2° 2° | .125" .125" | 5/8" 5/8" |

Stain and Finish Recommendations:

- Lamboo is constantly experimenting and testing stain and finish systems within the market to ensure the best systems are used on Lamboo materials. Please contact Lamboo directly to speak with a technical product specialist to help determine the best stain/finish system for your project.

Contact Information:

If you have any questions about Lamboo products or installation questions, please contact us using the following methods:

Phone: (866) 966-2999

Email: sales@lamboo.us