

STANDARD BAMBOO STRIP FLOORING

This specification is for standard bamboo strip flooring marketed under the Plyboo® trade name by Smith & Fong Company, Inc. This specification is a manufacturer specific, closed proprietary product specification.

Edit to suit project requirements. Modify as necessary and delete items that do not apply. Verify that referenced section numbers and titles. (numbers and titles referenced are based on CSI's Masterformat, 1995 Edition).

Timber bamboo is fast growing and long lived, and grows to a height of 40 feet with a diameter exceeding 6 inches and matures in 4 years. Bamboo is a grass. Unlike traditional hardwoods, bamboo when harvested does not require replanting. Mature bamboo has an extensive root system that continues to send up new shoots for decades. Bamboo is grown in managed forests in China. Harvesting is done by hand, minimizing the impact on the local environment. By working with bamboo and understanding its growth patterns, bamboo farmers are able to maximize timber production, and maintain healthy forests.

These products are made from Bamboo strips. Bamboo is hollow in the center and the strips are made up of the wall thickness of the stalk. The wall at the base can be more than an inch thick and will taper over the length of the stalk. Flat strips are milled from the core of this wall. These strips are then boiled in a bath of boric acid and lime solution. The purpose of this bath is to extract the starch that attracts termites or powder post beetles. Boric acid and lime are a natural non-toxic repellent and is used to insure that the products will be pest free throughout the duration of their product life. The strips are kiln dried and sanded to a smooth surface for laminating. The strips are then laminated edge to edge to create a single-ply strip. These strips are then laminated again to each other to create a multi-ply bamboo flooring strip.

Notes to the specifier are contained within rows of asterisks; delete asterisks and notes from final copy.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Standard bamboo strip flooring.

1.2 RELATED SECTIONS

A. Section 03300-Cast-In-Place Concrete; for concrete sub-floors.

B. Section 06100-Rough Carpentry; for wood sub-flooring.

1.3 REFERENCED STANDARDS

A. ASTM - American Society for Testing and Materials International.

1. ASTM E 648-00: Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

2. ASTM D 1037-99: Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.

3. ASTM D 4060-01: Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.

4. ASTM D 2394-83(1999): Standard Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring.

5. ASTM D 3359: Standard Test Methods for Measuring Adhesion by Tape Test.

6. ASTM F 1869-04: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Chloride.

Calcium

B. NOFMA - National Oak Flooring Manufacturer's Association.

1. NOFMA: Installation Manual, 1997-2004; Nailing Schedule.

C. NVLAP - National Voluntary Laboratory Accreditation Program.

1. NVLAP 23/T02 and FTM 1-1983: Small Scale Method for Determining Formaldehyde Emissions from Wood Products: Two Hour Desiccator.

1.4 SYSTEM PERFORMANCE

A. Standard Bamboo Flooring:

1. Average Hardness: 1700 psi as tested in accordance with ASTM D 1037.

2. Flame Spread: Critical radiant flux of 0.48, meets class 1 rating as tested in accordance with ASTM E 648.

3. Adhesive: VOC emission/formaldehyde emissions meet E1 standard as tested in accordance with NVLAP 23/T02 and FTM 1-1983.

4. Compatibility With Radiant Floor Heating Systems: Compatible.

1.5 RECOMMENDED APPLICATIONS

A. Finished floors for environments free from moisture, caustic chemicals, high wear and abrasion.

1.6 SUBMITTALS

A. Product Data: For each type of product specified.

B. Shop Drawings: Show installation details including location and layout of each type of wood flooring and accessory.

C. Samples: Provide samples of each specified flooring product with stain and finish specified.

D. Leads Submittals:

1. Credit EQ 4.1: Manufacturers' product data for adhesives, including printed statement of VOC content.

2. Credit EQ 4.2: Provide manufacturers' product data, for field-finished wood flooring, for transparent finishes, including printed statement of

VOC content and chemical components.

3. Credit MR 6: Provide manufacturer's product data indicating flooring is from a rapidly renewable resource.

E. Quality Assurance/Control Submittals

1. Qualifications: Proof of manufacturer and installer qualifications.

2. Test Reports: Reports for specified Physical Property Performance Requirements.

3. Manufacturer's Installation Instructions.

4. Closeout Submittals:

a. Maintenance instructions.

b. Warranties.

1.7 QUALITY ASSURANCE

A. Qualifications

1. Manufacturer:

- a. Minimum 15 years experience in manufacturing and distributing bamboo flooring products.
- b. Member: National Wood Flooring Association, American Bamboo Society, Hardwood, Plywood and Veneer Association,

U.S. Green

Building Council.

2. Installer: Minimum 3 years experience in hardwood flooring installation.

B. Closeout Submittals:

1. Maintenance instructions.
2. Warranties.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver wood flooring materials in original unopened cartons or bundles.

B. Store flooring at installation site for 72 hours before installation. Do not store directly on concrete or near outside walls.

1.9 PROJECT CONDITIONS

A. Room temperature and humidity of installation area should be consistent with normal, year-round living conditions for one week before installation

Room temperature of 60-70 degrees F and humidity range of 40-60 percent is recommended.

1.10 WARRANTY

A. Special Warranty: Smith & Fong commercial warranty referenced at www.plyboo.com

1.11 EXTRA MATERIALS

A. Furnish extra materials equal to one (1) percent of installed amount of each product specified. Package in protective covering for storage and identified with labels describing contents.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Plyboo Building Products, Smith & Fong Company, 375 Oyster Point Blvd., South San Francisco, California 94080; Phone: 866-835-9859;

Website:

www.plyboo.com; Email: info@plyboo.com.

2.2 MATERIALS

A. General:

1. Bamboo Species: Moso (*Phyllostachys Pubescens*).
2. Bamboo Chemical Treatment: Bath of boric acid and lime solution (natural non-toxic repellents).

B. Standard Flooring:

Specifier Note: Insert Product Number(s) from manufacturer's catalog below

1. Product Number(s):
2. (Select) Size(s):
 - a. 5/8 inch thick x 3-3/4 inches wide x 75 inches long.
 - b. 1/2 inch thick x 3 inches wide x 72 inches long.
3. Edge Configuration: Tongue and groove.
4. Grain:
 - a. Flat Grain (growth rings visible).
 - b. Edge Grain
5. Finish:
 - a. Prefinished.
 - b. Unfinished.
6. Color:
 - a. Amber.
 - b. Natural.

2.3 ACCESSORIES

- A. Trowelable Leveling and Patching Compound: Latex-modified, hydraulic-cement-based formulation approved by flooring manufacturer.
- B. Fasteners: As recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines: Wood Flooring."
- C. Asphalt-Saturated Felt: ASTM D 4869, Type II.
- D. Flooring Adhesive: Adhesive recommended by flooring and adhesive manufacturers for application indicated.
- E. Recoating Finish: Finishes and sealers manufactured by either Bonakemi or Basic Coatings.

Part 3

3.1 EXAMINATION

A. Examine sub-flooring for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of wood flooring.

Specifier Note: Paragraph below applies to glued down applications. Delete if glued down application is not used.

- B. Verify substrate is clean and free of loose material, grease and other contaminants which may interfere with bonding of adhesive.
- C. Proceed with installation after defects in subfloor have been corrected.
- D. Substrate Moisture Testing, General: Comply with applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."

E. Wood Sub-Flooring Moisture Testing:Moisture content of wood subfloor not to exceed 12 percent.

F. Concrete Sub-Flooring Moisture Testing: Perform tests in accordance with ASTM F 1869.

1.Concrete sub-floors must be fully cured,at least 60 days.

2. Perform tests so that each test area does not exceed 200 sq.ft.and perform not less than 2 tests in each installation area with test areas evenly spaced in installation area.

3.Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq.ft.in 24 hours.

3.2 PREPARATION

A. Wood Subfloors:Nail or screw every 6 inches along joists.Floor level not to exceed 3/16 inch per 10 foot radius.Sand down high spots and fill

low spots with a leveling and patching compound.

B. Concrete Subfloors:Floor level not to exceed 3/16 inch per 10 foot radius.Grind down high spots and fill low spots with leveling and patching compound.

3.3 INSTALLATION

Specifier Note:Smith & Fong uses NOFMA recommendations since bamboo is similar in hardness to oak.

A.Nail Down Installation:

1.Comply with manufacturer's written instructions,but not less then applicable NOFMA recommendations.

2.Lay a 15 lb asphalt felt paper vapor barrier.

3.Install flooring perpendicular to floor joists.

4.Lay first plank inside chalk line with grooved edge toward wall.Where space between wall and first rows of flooring does not allow room for nail gun,fasten by face nailing,gluing,or pre-drilling and edge nailing by hand with hammer and nail set.Counter-sink finish nails below surface and fill with matching wood putty.

5.Maintain a minimum of 1/2 inch expansion space between flooring,walls and vertical objects.Use wood or plastic spacers during installation to maintain this expansion space.

6.Lay subsequent rows with nail or staple gun appropriate for 1/2 inch flooring.

7.Nail each board every 6-10 inches on center and within 2 inches of each end.

8.Stagger end joints from row to row and use cut ends to begin and end following rows.

9.Remove expansion spacers and install moldings to cover the expansion space.

10.Install transition pieces as needed.

B.Glue Down Installation:

Specifier Note:Bostik's Best Urethane Adhesive is recommended adhesive. Never use the "wet lay" or "loose lay" method of installing.This is when the flooring is installed immediately after spreading adhesive. This method will trap moisture under the floor and could cause the flooring to warp.

1.Acceptable Subfloor Types:

a.3/4 inch Plywood or OSB.

b. Concrete slab.

c. 3/4 inch wood floor.

d.Ceramic tile.

e. Resilient tile and sheet vinyl.

2.Comply with flooring manufacturer's written instructions for proper installation of flooring.

3.Comply with adhesive manufacturer's written instructions for proper trowel size and adhesive set time.

4.Spread as much adhesive as can be covered by flooring in one hour, or as recommended by adhesive manufacturer's instructions.Spread with trowel at a 45 degree angle.

5.Lay the first row of flooring after adhesive has tacked,and continue laying flooring until adhesive is covered.Verify working lines to insure the floor is still aligned.

6.Remove any adhesive that gets on flooring surface immediately.

7.Maintain a minimum of 1/2 inch expansion space between flooring,walls and vertical objects.Use wood or plastic spacers during installation to maintain this expansion space.

8.Walk each section of flooring foot-by-foot or roll within the adhesive working time to ensure solid contact with the adhesive.Weight perimeter of flooring as required,until adhesive cures.

9.Remove expansion spacers and install moldings to cover the expansion space.

10.Install transition pieces as needed.

3.4 CLEANING

A.Repair or replace damaged installed products.

B.Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.

C. Clean floor surface of adhesive and smears in accordance with adhesive and manufacturer's instructions.

3.5 PROTECTION

A.Do not allow foot traffic or heavy furniture on floor for 24 hours or as adhesive manufacture requires.

B.Protect installed product from damage during construction.

C. Refinishing:

1.When refinishing is necessary and the floor has been maintained properly, it can easily be recoated by a process of cleaning,light abrasion and reapplication of an appropriate finish material.We recommend a system employing an initial sealer coat with 2-3 top coats of a finish manufactured by either BonaKemi or Basic Coatings.

For further questions,please feel free to contact us on our toll free line at 866-835-9859.

END OF SECTION 09644