



FINE BAMBOO FLOORING, PANELS & VENEER

**3-Part Specification
Spectrum Bamboo Flooring**

SECTION 09640

***Spectrum* PREFINISHED SOLID STRIP BAMBOO FLOORING**

GENERAL NOTES TO SPECIFIER:

THIS SPECIFICATION SECTION HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN THE PREPARATION OF PROJECT OR OFFICE MASTER SPECIFICATIONS. IT FOLLOWS GUIDELINES ESTABLISHED BY THE CONSTRUCTION SPECIFICATIONS INSTITUTE, AND THEREFORE MAY BE USED WITH MOST MASTER SPECIFICATION SYSTEMS WITH MINOR EDITING.

EDIT CAREFULLY TO SUIT PROJECT REQUIREMENTS. MODIFY AS NECESSARY AND DELETE ITEMS THAT ARE NOT APPLICABLE. VERIFY THAT REFERENCED SECTION NUMBERS AND TITLES ARE CORRECT. (NUMBERS AND TITLES REFERENCED ARE BASED ON *MASTERFORMAT*, 1995 EDITION).

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING SECTIONS 01330-SUBMITTAL PROCEDURES, 01620-PRODUCT OPTIONS, 01630-PRODUCT SUBSTITUTION PROCEDURES, 01660-PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01740-CLEANING, 01770-CLOSEOUT PROCEDURES, AND 01780-CLOSEOUT SUBMITTALS. CLOSE COORDINATION WITH DIVISION 1 SECTIONS IS REQUIRED. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

THIS IS A CLOSED PROPRIETARY SPECIFICATION.

NOTES TO THE SPECIFIER ARE CONTAINED WITHIN ROWS OF ASTERISKS; DELETE ASTERISKS AND NOTES FROM FINAL COPY.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G.: [35] [40] [45]. MAKE APPROPRIATE SELECTIONS AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED BLANK SPACES, E.G. _____ .

OPTIONAL PARAGRAPHS REQUIRING SELECTION OF ONE OF THE OPTIONS ARE SEPARATED BY "OR" WITHIN BRACKETS; DELETE FROM FINAL COPY. E.G.

<<<<< OR >>>>>

OPTIONAL PARAGRAPHS AND FEATURES THAT MAY BE SELECTED OR DELETED AS DESIRED ARE SHOWN IN BOLD FACE TYPE. DELETE BOLD FACE TYPE WHEN INCLUDING THESE PARAGRAPHS OR FEATURES.

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Prefinished solid bamboo strip flooring and matching accessories installed by the [nail or staple down method.] [glue down method.] [nail or staple and glue-down method.] [method as selected by the Contractor.]

INCLUDE SECTION NUMBER AND TITLE BELOW FOR OTHER TYPES OF FLOORING MATERIALS BORDERING THE BAMBOO FLOORING, AND FINISHED TRIM SUCH AS BASEBOARDS IF NOT INCLUDED IN THIS SECTION.

- B. Related Sections:
 - 1. _____.
 - 2. _____.

1.02 SUBMITTALS

- A. Reference Section 01330–Submittal Procedures; submit following items:

- 1. Product Data:
 - a. Flooring Specification Sheet. Include:
 - 1. finish data: finish type, composition and manufacturer.
 - 2. material safety data sheet (MSDS).
 - 3. certified hardness tests, Janka results.
 - 4. manufacturer’s installation guidelines and installation requirements.
 - b. Accessories. Include:
 - 1. finish data.
 - 2. accessory profiles.

 IF INSTALLATION IS “GLUE DOWN” REQUEST A SUBMITTAL ON THE INSTALLATION ADHESIVE.

- c. Installation adhesive.
 - d. Warranty
 - 2. Shop Drawings: Include direction of flooring, fastening method to be used, patterns and transition accessories. Include large scale details of accessories and details of all transitions.
 - 3. Samples:
 - a. 6 inch (150 mm) long strip of flooring plank, with manufacturer identified.
 - b. Fasteners.
 - c. One of each specified accessory, minimum 4 inches (100 mm) long.
 - 4. Quality Assurance/Control Submittals:
 - a. Qualifications:
 - 1. Proof of manufacturer qualifications.
 - 2. Proof of installer qualifications.
 - b. Test Reports: Reports for specified Physical Property Performance Requirements.
 - c. Manufacturer's Installation Instructions.

- B. Closeout Submittals: Reference Section 01780–Closeout Submittals; submit following items:

- 1. Maintenance instructions.
- 2. Special Warranties.

1.03 QUALITY ASSURANCE

- A. Qualifications:

- 1. Manufacturer Qualifications:
 - a. Minimum 10 years experience in manufacturing and distributing bamboo flooring of the type specified.
 - b. Member: National Association of Floor Covering Distributors, National Wood Flooring Association, World Floor Covering Association, Business for Social Responsibility.
- 2. Installer Qualifications:

- a. Minimum three years experience in bamboo / hardwood flooring installation.
- b. Minimum three years experience in installation of bamboo / hardwood flooring over radiant heating systems.

B. Pre-Installation Meeting:

- 1. Convene meeting at project site within one week of scheduled start of installation with representatives of the following in attendance: Owner, Architect, General Contractor, and Sub-Contractor.
- 2. Review project / site conditions, requirements of related work, requirements for operation of HVAC system, installation guidelines, storage and handling procedures, and protection measures.
- 3. Keep minutes of meeting including responsibilities of various parties and deviations from specifications and installation guidelines.
- 4. Distribute minutes to attendees within 48 hours.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Reference Section 01660–Product Storage and Handling Requirements.

- B. Deliver flooring to project site in original boxes not less than 5 days prior to start of installation. Allow sufficient time for flooring to acclimate to site conditions.

1.05 PROJECT/SITE CONDITIONS

RADIANT HEAT NOTE: SELECT "5 DAYS" IN FOLLOWING PARAGRAPH IF FLOORING IS TO BE INSTALLED OVER A RADIANT HEAT SYSTEM; OTHERWISE, SELECT "72 HOURS."

- A. Environmental Requirements: All installation spaces, flooring and adhesive must be maintained at normal occupancy temperature and humidity levels for a minimum of [72 hours] [5 days] prior to and continuously following installation. HVAC systems must be operational and controlling site temperature and humidity.

1.06 WARRANTY

A. Special Warranty for Teragren *Spectrum* Prefinished Solid Strip Flooring:

- 1. Teragren Structural Warranty: 25 years against delamination, separation, buckling or cupping as a result of a manufacturing defect when installed and maintained in accordance with manufacturer's installation instructions.
- 2. Teragren Commercial Finish Warranty: 5 years against wear through to the underlying flooring or separation from the flooring as a result of a manufacturing defect when installed and maintained in accordance with manufacturer's installation instructions.

USE ABOVE FINISH WARRANTY FOR COMMERCIAL PROJECTS. USE FOLLOWING FINISH WARRANTY FOR RESIDENTIAL PROJECTS.

- 3. Teragren Residential Finish Warranty: 25 years against wear through to the underlying flooring or separation from the flooring as a result of a manufacturing defect when installed and maintained in accordance with manufacturer's installation instructions.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Teragren LLC
12715 Miller Road NE, Suite 301
Bainbridge Island, WA 98110
Tel: (800) 929-6333
Fax: (206) 842-9456
e-mail: info@teragren.com
Website: http://www.teragren.com

INSERT NAME, ADDRESS AND PHONE NUMBERS OF LOCAL DISTRIBUTOR/DEALER BELOW.

1. Distributor/Dealer:

- B. Bamboo Flooring Strip Type:
 1. Vertical Grain: Bamboo strips laminated together with edges exposed to the wear surface to form a solid bamboo plank without internal voids.
 - a. Color: [Natural] [Caramelized] [Natural or caramelized as shown on Drawings].
 2. Flat Grain: Bamboo strips laminated together face up to form a 3-ply solid bamboo plank without internal voids.
 - a. Color: [Natural] [Caramelized] [Natural or caramelized as shown on Drawings].

- C. Most Teragren products may be special ordered using an adhesive containing no urea that is compliant with the U.S. Green Building Council's LEED rating system.

- D. Substitutions: None Permitted.

2.02 MATERIALS

- A. Bamboo Flooring:
1. Specie: Moso (Phyllostachys Pubescens).
 2. Bamboo Harvest: Bamboo harvested no sooner than 5-1/2 to 6 years and no more than 7 years to ensure color clarity, hardness and stability of fiber.
 3. Size: 3-5/8 inches (92 mm) wide by 5/8 inch (15 mm) thick by 36 inch (900 mm) length.
 4. Edge: Tongue and groove with micro-bevel edge.
 - 5: Back: Channeled and sealed with factory-finish seal coat.
 6. Chemical Treatment: Natural borate solution and hydrogen peroxide to eliminate pests and mildew.
 7. Finish: German KLUMPP brand. Five-coat, 100 percent solids, non off-gassing, water-based system with aluminum oxide and two top coats of scratch-resistant polyurethane.
 8. Physical Property Performance Requirements:
 - a. Hardness: ASTM D 1037, Janka Ball: Minimum 2054 Flat Natural; 2138 Vertical Natural; 1592 Flat Caramelized; 1900 Vertical Caramelized.
 - b. Dimensional Stability: ASTM D 1037: Dimensional change coefficient: 0.35 parallel / 0.38 perpendicular / 0.2 thickness
 - c. Flammability: ASTM E 648: Class I Interior Floor Finish rating per NFPA 101.
 - d. Abrasion Resistance: ASTM D 4060, CS-17 Taber abrasive wheels: Final wear-through: Minimum 20,500 cycles.
 - e. Moisture Content: ASTM D 4442, Oven Dry Method: 5.47 percent average.
 - f. Formaldehyde Emissions: ASTM E 1333: 0.0155 ppm average.
 - g. The Radiant Panel Association defines engineered bamboo flooring as having a known R value of 0.96 per inch of thickness. The thickness of Teragren Spectrum bamboo flooring is 5/8" creating an R value of 0.6.

- B. Installation Adhesive: One-part moisture-cured urethane premium wood floor adhesive.
- C. Nails or Staples:
 1. 1-1/2 Inch (38 mm) Thick Subfloor: 2 inch (50 mm) nails or staples.
 2. 3/4 Inch (19 mm) Thick Subfloor: 1-1/2 inch (38 mm) nails or staples.
 3. 1 inch (25 m) Thick Plywood Subfloor over Concrete: 1-1/4 inch (32 mm) nails or staples.

2.03 ACCESSORIES

- A. Stair Treads: 11-1/2 inches (292.1 mm) wide by 1-1/16 inches (26.98 mm) thick in both 48 inch (1219.2 mm) and 96 inch (2438.4 mm) lengths [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick by [_____ inches (_____ mm) long]. Match flooring grain, color, and finish.
- B. Stair Riser: 7-1/2 inches (190.5 mm) wide by 5/8 inch (15.87 mm) thick in both 48 inch (1219.2 mm) and 96 inch (2438.4 mm) lengths [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick by [_____ inches (_____ mm) long]. Match flooring grain, color, and finish.
- C. Stair Nosing: [3-1/2 inches (88.9 mm) wide by 1-1/8 inches (28.575 mm) thick] [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick]. Match flooring grain, color, and finish.

 IF TRANSITION STRIPS TO OTHER FLOORING MATERIALS ARE REQUIRED, VERIFY WHICH FLOORING INSTALLER SHOULD PROVIDE THE TRANSITIONS AND INCLUDE BELOW OR IN ANOTHER SECTION AS APPROPRIATE.

- E. Clamshell Floor Reducer: [2-3/8 inches (60.325 mm) wide by 5/8 inch (15.875 mm) thick] [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick]. Match flooring grain, color, and finish.
- F. T-Mold: [2 inches (50.8 mm) wide by 15/16 inch (23.81 mm) thick] [_____ inches (_____ mm) wide]. Match flooring grain, color, and finish.
- G. Base Shoe: [3/4 inch (19.05 mm) high by 1/2 inch (12.7 mm) thick] [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick]. Match flooring grain, color, and finish.
- H. Base Molding: [3-1/2 inches (88.9 mm) high by 1/2 inch (12.7 mm) thick. [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick]. Match flooring grain, color, and finish.
- I. Baby Threshold: [2 inches (50.8 mm) wide by 1 inch (25.4 mm) thick] [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick]. Match flooring grain, color, and finish.
- J. Architectural Molding: [2 inch (50.8mm) & 3-5/8 inch wide by 3/4 inch (19.05 mm) thick] [_____ inches (_____ mm) wide by _____ inches (_____ mm) thick]. Match flooring grain, color, and finish.

FLOOR VENTS ARE AVAILABLE IN SEVERAL STANDARD SIZES AND CUSTOM SIZES. VERIFY THAT APPROPRIATE
VENTS ARE NOTED ON THE DRAWINGS .

K. Floor Vent: Size and type as shown on Drawings. Match flooring grain, color, and finish.

INCLUDE ADDITIONAL ACCESSORIES SUCH AS METAL OR WOOD FEATURE STRIPS IF USED IN THE PROJECT.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates upon which flooring will be installed.
1. Verify that subfloor is clean, dry, and free of contaminates.

DELETE FOLLOWING PARAGRAPH AND TWO SUBPARAGRAPHS IF BAMBOO FLOORING IS BEING INSTALLED OVER
OTHER THAN CONCRETE SUBSTRATES.

2. Test concrete floors for moisture content using a Calcium Chloride test. Do not install flooring if vapor pressure exceeds 3 lbs per 1,000 sf (15g per m²) within a 24 hour period.
 - a. In multiple story buildings, test each floor level scheduled to receive bamboo flooring.
 - b. Mark test location(s) on As-Built Drawings.
- B. Verify that HVAC system is operating and maintaining occupancy level temperature and humidity conditions.
- C. Coordinate with responsible entity to correct unsatisfactory conditions.
- D. Commencement of work by installer is considered an acceptance of substrate conditions.
- E. Prior to installation, the installer shall examine all material and determine that it matches the work order.

3.02 PREPARATION

- A. Acclimatization: Open flooring boxes, remove shrink wrap and foam packing at a minimum of 3 days prior to start of installation.
- B. Grind and or fill subfloor using methods and materials appropriate to the subfloor construction to eliminate humps and depressions. For best results neither humps nor depressions shall exceed 1/8 of an inch (3 mm) within a 6 foot (1830 mm) radius or 3/16 of an inch (4.7 mm) within a 10ft (3048 mm) radius.
- C. Because bamboo is a natural fiber, variations in color naturally occur. Each box should be inspected for differences in color with color variance staggered throughout the floor.

3.03 INSTALLATION

MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ADEQUATE FOR NORMAL INSTALLATION CONDITIONS.
UNUSUAL CONDITIONS MAY REQUIRE ADDITIONAL INFORMATION IN THIS ARTICLE.

- A. Bamboo Flooring: Install in accordance with manufacturer's installation guidelines.
- B. Install flooring planks by [gluing and stapling to substrate] [gluing to substrate] [stapling to substrate] [nailing or stapling and gluing to substrate] [nailing or stapling, gluing, or nailing or stapling and gluing to substrate at Contractor's option].
- C. Lay flooring in the direction(s)/pattern(s) as shown on Drawings. Where not identified run plank length to match longest room dimension.
- D. Accessories: Install using methods appropriate to the accessory and flooring system.
- E. Accommodate thermal expansion. Install transitions, trim and base molding, as identified in manufacturer's installation guidelines and as required to accommodate site conditions.

3.04 CLEANING

- A. Reference Section 07140-Cleaning.

3.05 PROTECTION

- A. Cover installed flooring with heavy Kraft-paper or other suitable covering. Do not use a non-breathable sheet or film that could cause condensation to form. Maintain covering throughout remainder of construction period.

END OF SECTION¹

¹ This specification was prepared by Teragren LLC. Comments or suggestions for improvement should be addressed to: Teragren, 12715 Miller Road NE, Suite 301, Bainbridge island, WA 98110, 1-800-929-6333, www.teragren.com, Email: info@teragren.com
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