



STILETTO

## PRODUCT SPECIFICATION

### IN CSI 3-PART MASTERFORMAT 4.0



The mark of  
responsible forestry

### Smith & Fong Company

475 – 6<sup>th</sup> Street  
San Francisco, CA 94103

Phone: (415) 896-0577  
Toll Free: (866) 835-9859  
Fax: (415) 896-0583

Website: [www.plyboo.com](http://www.plyboo.com)

E-mail: [SALES@PLYBOO.COM](mailto:SALES@PLYBOO.COM)

## MF 2010 Section 09 06 23 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.

SAMPLE LANGUAGE IS PROVIDED FOR APPLICABLE ARTICLES IN

### PART 1–GENERAL,

### PART 2–PRODUCTS,

**PART 3–EXECUTION**, FOLLOWING THE CONSTRUCTION SPECIFICATION INSTITUTE'S *SECTIONFORMAT 4.0*. BECAUSE OF THE VARIATION IN SPECIFICATION SYSTEMS CURRENTLY IN USE, ARTICLE AND PARAGRAPH NUMBERS AND TITLES MAY DIFFER SOMEWHAT THAN PRESENTED HEREIN. THE SAMPLE LANGUAGE SHOULD BE EDITED ACCORDINGLY TO FIT EACH FIRM'S SPECIFICATIONS.

ARTICLES AND PARAGRAPHS OF THIS PRODUCT SPECIFICATION ASSUME THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING 01 25 13–PRODUCT SUBSTITUTION PROCEDURES, SECTIONS 01 33 00–SUBMITTAL PROCEDURES, 01 62 00–PRODUCT OPTIONS, 01 66 00–PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01 74 00–CLEANING AND WASTE MANAGEMENT, 01 77 00–CLOSEOUT PROCEDURES, AND 01 78 00–CLOSEOUT SUBMITTALS. CLOSE COORDINATION WITH DIVISION 1 SECTIONS IS REQUIRED. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION MAY BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

NOTES TO THE SPECIFIER ARE IN ALL UPPER CASE TEXT AND ARE CONTAINED WITHIN ROWS OF ASTERISKS.

HIGHLIGHTED TEXT AND NOTES RELATE TO GREEN BUILDING RATING SYSTEMS (LEED®, GREEN GLOBES®, OTHER INTERNATIONAL GREEN BUILDING CODES, LOCAL GREEN BUILDING CODES) AND CAN BE DELETED IF THE PROJECT IS NOT INTENDED TO ATTAIN A GREEN BUILDING RATING STANDARD.



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

## SECTION 09 06 23 Bamboo Flooring

### PART 1 - GENERAL

#### 1.01 SUMMARY/DESCRIPTION

- A. Stiletto is a collection of natural, amber and color-stained, prefinished bamboo solid strand strip flooring manufactured with no urea formaldehyde and is FSC-certified.

A click-lock flooring system, it can be installed with the floating method over an approved underlayment system, or by direct glue down method on concrete, wood, or wood subfloor surfaces. The flooring is suitable for high traffic retail and commercial environments and residential installations and is compatible with radiant floor systems.

#### B. RELATED SECTIONS

1. Section 03 30 00 – Cast-In-Place Concrete
2. Section 06 16 23 – Subflooring
3. Section 06 16 26 – Underlayment
4. Section 06 16 29 – Acoustical Underlayment
5. Section 06 46 19 -- Wood Base and Shoe Moldings
6. Section 01 04 00 -- Submittals
7. Section 01 35 63 – Sustainability Certification Project Requirements

#### 1.02 REFERENCES

- A. ASTM - American Society for Testing and Materials International.
1. ASTM E 648: Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
  2. ASTM D1037: Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.
  3. ASTM D3359: Standard Test Method for Measuring Adhesion by Tape Test
  4. ASTM D3501: Standard Test Methods for Wood-Based Structural Panels in Compression.
  5. ASTM D4060: Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
  6. ASTM D4442: Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
  7. ASTM D5116-06: Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products [Guidelines also set by the California Department of Health Services (CDHS) *Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers* (CA/DHS/EHLB/R-174, 2004); **also known as, chamber testing portion of CA Section 01350.**]
- B. FSC – Forest Stewardship Council
- C. Green Building Rating Systems:
1. LEED® -- Leadership in Energy & Environmental Design
  2. UKGBC – United Kingdom Green Building Council
  3. Green Globes® -- Building Certification
  4. BREEM – BRE Environmental Assessment Method
- D. Green building rating system guidelines: [no added urea formaldehyde], [rapidly renewable], [low-emitting].
- E. 2009 International Residential Building Code (IRC)



- F. 2012 International Building Code (ICB)
- G. State and Local Building Codes

### 1.03 QUALITY ASSURANCE

#### A. Qualifications

1. MANUFACTURER:  
Bamboo Flooring Manufacturer's Qualifications:
  - a. Minimum twenty (20) years continuous experience producing bamboo flooring and minimum ten (10) years producing bamboo strand products.
  - b. Bamboo flooring must be FSC-certified and manufactured at an ISO 9001 certified facility.
2. Installer Qualifications:
  - a. Minimum five (5) years documented experience installing bamboo and hardwood flooring.
  - b. Installer shall be liable for all matters related to installation for a minimum period of one (1) year after the floor has been substantially installed and completed.
3. Performance Testing:
  - a. Strand bamboo flooring must meet or exceed the specified ASTM physical property performance requirements.

### 1.04 SUBMITTALS

Submit under the provisions of Section 00 62 11, Submittal Transmittal Form.

#### A. Specification:

1. Submit strand bamboo specification sheets, FSC certification, and independent laboratory test results for CA 01350.

#### B. Samples:

1. Submit [#] 6-inch (152 mm) samples of flooring material in color(s) specified.
2. [Submit [#] 4-inch (100 mm) samples of the [PLYBOOQUIET®][PLYBOOFIT®] padded sub-floor system specified.]

#### C. Quality Assurance Submittals / Certificates

1. Submit Proof of Manufacturer Qualifications.
2. Submit Proof of Installing Contractor's Qualifications.
3. Submit FSC certification.
4. Submit LEED submittals for MR and IEQ credit contributions.
  - a. MRc6, Rapidly Renewable Materials: [bamboo flooring]
  - b. MRc4, Recycled Content [crumb rubber underlayment ] (95% recycled content) [PLYBOOQUIET] [PLYBOOFIT]
  - c. MRc5, Regional Materials [PLYBOOQUIET] [PLYBOOFIT]
  - d. MRc7, Certified Wood: Forest Stewardship Council (100% FSC)
  - e. IEQc4.3, Low-Emitting Materials – Flooring Systems (CA Section 01350 tested) [manufacturer's product data]
  - f. Installer Supplied Adhesive(s):
    - (i) IEQc4.1, Low-Emitting Materials – Adhesives [manufacturer's product data]
5. Submit independent laboratory certification for CA 01350 testing for flooring
6. Submit independent laboratory test results for PlybooQuiet [ASTM E2179-09, "Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors; ASTM E492-09, ASTM E989-06, "Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors with a Drop Ceiling]
7. Submit Manufacturer's recommended installation instructions
8. Submit Maintenance Guidelines as requested by Specifier
  - a. MSDS data
  - b. Care, Maintenance and Service Guidelines



- c. HVAC temperature and humidity requirements
- 9. Submit strand bamboo product flooring warranty

#### 1.05 WORKING CONDITIONS, DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original unopened cartons until ready for installation.
- B. Reference Section 01 66 00: Product Handling and Storage Requirements.
  - 1. Cartons are to be opened and flooring materials stored in open cartons for a minimum seventy-two (72) hours.
  - 2. Do not store directly on concrete or near outside walls.
- C. Anticipate and schedule work to assure environmental conditions (temperature, humidity and ventilation) are within limits recommended by manufacturer for optimum results.

#### 1.06 WARRANTY

- A. Smith & Fong warrants that products sold under this warranty are at the time of sale, free of defects in material and manufacture. The full warranty is available at <http://www.plyboo.com/downloads/smith-fong-flooring-warranty>.

### PART 2 – PRODUCTS

#### 2.01 MANUFACTURER

- A. Acceptable Manufacturer: Smith & Fong Company, which is located at 475 Sixth Street, San Francisco, CA 94103; Toll Free Tel: (866) 835-9859; Email: [sales@plyboo.com](mailto:sales@plyboo.com); Web: [www.plyboo.com](http://www.plyboo.com)
- B. Substitutions: Not permitted.
- C. Requests for substitution will be considered in accordance with provisions of Section 00 63 25.

#### 2.02 MATERIALS

- A. Products: Stiletto Bamboo Flooring by Smith & Fong Company
  - 1. Species: Moso (Phyllostachys Pubescens) Bamboo
  - 2. Non-urea formaldehyde resin system
  - 3. FSC certified
  - 4. Finish: Factory applied multi-coat, polyurethane and sealer finish system formulated specifically for Plyboo Stiletto
  - 5. Color: [Brushed Pearl] [Brushed Sahara Sand] [Brushed Eclipse] [Brushed Amber] [Brushed Barnwood] [Cerused Taupe]
  - 6. Back: Channeled
  - 7. Edge Configuration: Floating System – Click-Locking configuration on four-sides
  - 8. Type: Strand Prefinished: 5 inches (127mm) wide by 9/16 (14mm) inches thick by 72 inches (1830mm) in length
  - 9. Physical Mechanical Properties:
    - a. ASTM E648: Critical Radiant Flux, Class 1
    - b. ASTM D1037:
      - i. Dimensional Stability, 50% to 20% RH; Linear Expansion: Parallel -0.02%, Perpendicular -0.23%; Thickness Swell -0.25%.
      - ii. Hardness (Janka Ball Test): 3,500 lbf (avg)
    - c. ASTM D3359: Adhesion by Tape Test, Class 4B
    - d. ASTM D3501: Compressive Strength / Max Load, 9,340 lbs / 13,140 lbs.
    - e. ASTM D4060: Taber Abrasion: Avg. Wear-through / Wear rate, 11,000 cycles / 5,000 cycles per 0.001 inch
    - f. ASTM D4442: Moisture Content, 6 – 9% (average range)
    - g. ASTM D5116-06: Organic Emissions (**CA Section 01350**), Office scenario/ Classroom scenario: Pass/Pass  
**(0.00 µg/m3 formaldehyde detected)**

#### 2.03 ACCESSORIES

- A. Underlayment:



1. PlybooQuiet, SKU# PQR-45B, Recycled Rubber Padding: 1/8 inch (3mm) x 48 inches (1220mm) wide x 50 feet (15.24m) long as supplied by Smith & Fong Company
- B. Flooring Accessories and Trim
  1. Accessories and trim pieces, as specified in [color], as listed at <http://www.plyboo.com/downloads/plybostrand-accessories>

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances, and other conditions affecting performance of flooring.
- B. Verify substrate is dry, clean, and free of loose material.

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 Specifier Note: DELETE PARAGRAPH BELOW AND TWO SUBPARAGRAGHS (SECTION C AND SUBSESTIONS 1 AND 2) IF SUBSTRATE IS NOT CONCRETE.  
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C. Substrate Moisture Testing: Use Calcium Chloride Test and Tramex Moisture Encounter Meter. Moisture abatement measures must be taken following industry standard procedures and post abatement test measurement taken to confirm effectiveness.

1. In multiple story buildings, test each floor level scheduled to receive bamboo flooring.
2. Mark test location(s) on As-Built Drawings.

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 Specifier Note: DELETE PARAGRAPH BELOW (SECTION D) IF SUBSTRATE IS NOT WOOD.  
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- D. Do not install bamboo flooring if wood substrate (NFWA reference) exceeds 12% moisture.
- E. Verify HVAC System is operating and maintaining temperature and humidity conditions in compliance with Manufacturer's Installation Instructions.
- F. Coordinate with responsible entity to correct unsatisfactory conditions.
- G. Commencement of work by installer is acceptance of substrate and environmental conditions.

### 3.02 PREPARATION

- A. Humidity: maintain indoor air humidity levels between 35% and 55% for two weeks before installation and continually thereafter.
- B. Temperature: maintain temperature of materials and installation area between 50 degrees and 80 degrees during installation and thereafter.
- C. Acclimatization: Seventy-two (72) hours prior to installation place opened boxes on a flat, even surface in the center of the work-space.
- D. Grind and fill subfloor using methods and materials appropriate to the subfloor construction to eliminate high spots and depressions exceeding 3/16 inch (5 mm) in 10 feet (3048 mm) diameter.

### 3.03 INSTALLATION

- A. Flooring: Comply with Manufacturer's Installation Instructions.

### 3.04 CLEANING: Reference Section 01 74 00: Cleaning and Waste Management

- A. Repair or replace damaged installed products.
- B. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.

### 3.05 PROTECTION

- A. Protect installed product from damage during construction by covering with heavy kraft-paper or other suitable covering. Do not use non-breathable sheet or film that could cause condensation to form. Maintain covering throughout remainder of construction period.



END OF PRODUCT SPECIFICATION