

ARCHITECTURAL PUREFORM BAMBOO PANELS

Cross-ply Lamination and Solid, Vertical and Flat Grains



MF '04 SECTION 06 42 00

DOC: TRDP75 07 28 11 LEED® MR6, MR7, IEQ 4.4 (FSC and/or formaldehyde-free special order)

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 *MASTER FORMAT*, 2004 EDITION)

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING SECTIONS 013300 –SUBMITTAL PROCEDURES, 016000 –PRODUCT REQUIREMENTS, 017700 –CLOSEOUT PROCEDURES. 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.

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Unfinished Pureform (Traditional) [Vertical Grain] [Flat Grain] cross-ply and solid bamboo panels installed as prescribed by fabricator(s).
Teragren's Scientific Certification Systems Indoor Advantage™ Gold-certified bamboo panels are 25% harder than red oak; conform to the Collaborative for High Performance Schools (CHPS) IEQ 2.2 and CA Section 01350 Classroom Scenario and are Indoor Air Quality certified (Registration SCS.IAQ-01879).

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INCLUDE SECTION NUMBER AND TITLE BELOW FOR OTHER TYPES OF MATERIALS BORDERING THE BAMBOO PANELS
IF NOT INCLUDED IN THIS SECTION.

- B. Work in other sections:
 - 1. For project sustainability requirements, See 018113 “Sustainable Design Requirements”

1.02 SUBMITTALS

- A. Submit the following items:
 - 1. Product Data:
 - a. Pureform Panel Specification Sheet.
 - b. Finish data: finish type, composition and manufacturer (See summary in section 2.02).
 - c. Proof of supplier’s legal right to provide product
 - d. Material Safety Data Sheet (MSDS) (submit if required for LEED submittal)
 - e. SCS Indoor Advantage™-Gold Certification #SCS-IAQ-01879: Collaborative for High Performance Schools (CHPS) IEQ 2.2 and CA Section 01350 Classroom Scenario
 - f. Manufacturer’s storage and installation guidelines
 - g. ISO-9001 and 14001 factory certifications
 - h. Forest Stewardship Council Chain-of-Custody #SCS-COC-002912 (special order)
 - 2. Warranty for Architect’s review.
 - 3. Shop Drawings: Include large scale details.
 - 4. Make shop drawings in module required by Architect or electronically using Architects’ format.
 - 5. Samples:
 - a. Minimum 3.875 inches (98.42 mm) with manufacturer identified.
 - 6. Quality Assurance/Control Submittals:
 - a. Test Report: Electronic copy of lab reports including name and contact information of certified lab.
 - b. Manufacturer’s Installation Guidelines:
http://www.teragren.com/ad/installation_panels_veneer.html
- B. Closeout Submittals, submit following items:
 - 1. Maintenance instructions
 - 2. Special Warranties for use in Owner’s manual.

1.03 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications:
 - a. Minimum 20 years’ experience in manufacturing and distributing bamboo panels.
- 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: 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.

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3. Discuss responsibilities of various parties and deviations from specifications and guidelines for installation.
4. Distribute minutes to attendees within 48 hours.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver panels to project site in original packaging not less than 5 days prior to start of installation. Allow sufficient time for panels to acclimate to site conditions.
- B. Store panel materials in conditioned space at all times, and do not allow to freeze or get wet.
- C. Review Storage + Installation Guidelines:
http://www.teragren.com/ad/installation_panels_veneer.html

1.05 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: HVAC systems must be operational and controlling site temperature and humidity.

1.06 WARRANTY

- A. Warranty for Teragren Panels: 5 Years. See www.teragren.com for warranty details.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- | | |
|---|--|
| <ol style="list-style-type: none"> 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. Pureform Unfinished Bamboo Cross-ply Panels:
 - UFP-3/4-~~X~~4x8-3
X:FGC: (Flat Grain Caramelized); FGN: (Flat Grain Natural); VGC:(Vertical Grain Caramelized)
VGN: (Vertical Grain Natural)
96" x 48" x 3/4" (2440mm x 1220 mm x 19mm)
 - UFP-3P1/2-~~X~~4x8
X:FGC: (Flat Grain Caramelized); FGN: (Flat Grain Natural); VGC:(Vertical Grain Caramelized)
VGN: (Vertical Grain Natural)
96" x 48" x 1/2" (2440mm x 1220mm x 12.7mm)
 - UFP-3P1/4-~~X~~4x8
X:FGC: (Flat Grain Caramelized); FGN: (Flat Grain Natural); VGC:(Vertical Grain Caramelized)
VGN: (Vertical Grain Natural)
96" x 48" x 1/4" (2440mm x 1220mm x 6.35mm)

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Pureform Unfinished Bamboo Solid Stock Panels:

UFFP –~~X~~1x8

X: FGC: (Flat Grain Caramelized); FGN: (Flat Grain Natural); VGC:(Vertical Grain Caramelized)

VGN: (Vertical Grain Natural)

13/16" x 12" x 96" (2440mm x 305mm x 21mm)

UFFP -3/4-~~X~~4x8

X: VGC:(Vertical Grain Caramelized); VGN: (Vertical Grain Natural)

96" x 48" x 3/4" (2440mm x 1220 mm x 19mm)

NAF-No Added Formaldehyde - FSC-certified bamboo by special order

C. Substitutions: None Permitted.

2.02 MATERIALS

A. Pureform Unfinished Bamboo Panels:

1. Species: Moso (Phyllostachys Pubescens).
2. Bamboo Harvest: Bamboo harvested between 5-1/2 to 6 years to ensure color clarity, hardness and stability of fiber.
3. Size: Choose from dimensions listed above.
4. Chemical Treatment: Natural borate solution and hydrogen peroxide to eliminate pests and mildew at time of manufacture. Note: Treatment is only applied to Flat Natural (FGN) and Vertical Natural (VGN) Pureform traditional bamboo.
5. Two Stage Moisture Balancing Process: Raw materials and finished product are moisture balanced to equilibrium at 45-50% Relative Humidity
6. Sanded to 180 grit all four sides (S4S).
7. Physical Property Performance Requirements:

Dimensional Stability

ASTM D 1037: Dimensional change coefficient (50% RH to 90% RH): Parallel: .00063 / Perpendicular: .00076 / Thickness: N/A

Moisture Content

ASTM D4442, Oven Dry Method: 6-8 percent average

Screw Holding

ASTM D 1037 in lb; Face avg. 410, end grain edge 734, side grain edge 391.

Surface Burning

ASTM E 84, Panels received Class 3(C) rating untreated. Unfinished Panels may receive a Class 2(B) or 1(A) rating when coated with fire retardant finish.

Critical Radiant Flux

ASTM E 648, Panels in a vertical application have a Class 3(C).

Smoke Density

ASTM E 622, Where passing is 450 or less, Teragren bamboo panels score a max 270 in flaming mode; 330 in non-flaming mode.

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Static Bending

ASTM D 3043 Method D; Avg. thickness 0.761", Ave density 65.1 lbs/ft³, avg. perpendicular MOR (PSI)/MOE 10³PSI) 8,091/520, Avg. parallel MOR (PSI)/MOE 10³PSI) 13,056/1,451

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates upon which panels will be installed.
 - 1. Verify that substrate is clean, dry, and free of contaminates.
- B. Verify that HVAC system is operating properly and maintaining proper occupancy level temperature and humidity conditions.
- C. Coordinate with responsible entity to correct unsatisfactory conditions.
- D. Commencement of work by fabricator or installer is an acceptance of suitable substrate conditions.
- E. Prior to installation, the fabricator or installer shall examine all material and determine that it matches the work order.

3.02 PREPARATION

- A. **Acclimation:** Bring the moisture content and temperature of the product into harmony with the fabrication and installation environment.

Note: fabrication of product in an environment with a different relative humidity level than that of the installation environment may result in undesired material dimensional change. Extreme dry climates or environments that are not able to maintain a constant 40% to 60% year-round relative humidity are not appropriate environments.

Length of Acclimation - Just as with hardwoods of other species, acclimation time of bamboo will vary with site conditions as well as the width and thickness of the bamboo. Acclimation should match the installation environment or allowances should be made for acclimation to the installed site. 72 hours is considered a minimum. Additional acclimation may be necessary if products have newly exposed edges due to cutting and shaping. In extremely dry climates without relative humidity controls, acclimation of thick material such as a 1.5" counter or table top, may take longer than expected. Material may change dimensionally or warp especially if acclimation is uneven and exposed to extreme humidity or temperature changes. If left to acclimate too long, material may dry and crack.

- B. Because bamboo is a natural fiber, variations in color naturally occur.

3.03 INSTALLATION

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- A. Bamboo Panels: Install in accordance with manufacturer's installation guidelines.
- B. Accommodate thermal expansion. Install as identified in manufacturer's installation guidelines and as required to accommodate site conditions.

3.04 CLEANING

- A. Remove all debris left from installation; vacuum and leave space in clean, debris-free condition.

3.05 PROTECTION

- A. Cover with suitable covering as necessary. 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 Issue Date: October 1, 2010, Revised April 16, 2015.

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