



This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies wall panels, including solid engineered bamboo panels for single-skin and sandwich panel applications, marketed under the Lamboo® Elements™, and RainScreen™ trade names, manufactured by Lamboo, Inc. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 07420 (SOLID/ENGINEERED BAMBOO-EXTERIOR GRADE PRODUCTS)

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Solid LVB(Laminated Veneer Bamboo) [Single-skin panels/Components] [Specify panel type.] for:
 - 1. [Curtain wall panel] [Storefront panel] [Wall cladding system] [Soffit panel] [Fascias] [Insert panel application(s).] application.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

[Lamboo® Elements™](#) Exterior Millwork/ Panels & Dimensional Components
[Lamboo® RainScreen™](#) RainScreen, Soffit, and Fascia Systems

- B. Related Sections: Section(s) related to this section include:
 - 1. Rough Carpentry: Division 6 Rough Carpentry Section.
 - 2. Aluminum Subframing: Division 6 Metal Fabrications Section.
 - 3. Storefront Framing: Division 8 Aluminum Entrance and Storefront System Section.
 - 4. Curtain Wall Framing: Division 8 Aluminum Curtain Wall Framing System.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.

1.02 REFERENCES

- A. ASTM International:
 - 1. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. European National Standards (EN):
 - 1. EN 438-2 Decorative Panels/Engineered Panels
- C. Deutches Institut fur Normung e. V. (German Standards Institute) (DIN).

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide panels that have been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this Article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's SPEC-DATA® product sheet, for specified products.
- C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including edge conditions, panel/component joints, fixture location, anchorage, accessories, finish colors, patterns and textures.
- D. Samples: Submit selection and verification samples for finishes, colors and textures.
- E. Quality Assurance Submittals: Submit the following:
 - 1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
 - 2. Certificates:
 - a. Qualification Certificates: Submit certificate indicating compliance with qualification requirements in Quality Assurance article.
 - b. Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
 - 3. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.

- 4. Manufacturer's Field Reports: Manufacturer's field reports specified herein.
- F. Closeout Submittals: Submit the following:
 - 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.
 - 2. Warranty: Warranty documents specified herein.

1.05 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications: Manufacturer producing product in ISO 9001 certified facility, capable of providing field service representation during fabrication and approving application method.
 - a. Obtain from a single manufacturer.

Specifier Note: Confirm availability of qualified fabricators meeting requirements specified below.

- 2. Fabricator/Installer Qualifications: Installer shall be approved by the manufacturer and experienced in performing work of similar type and scope.

Specifier Note: Retain paragraph below for fabricated assemblies required for review of construction, coordination of work of several sections, and testing or observation of operation. Mock-ups, when accepted or approved, establish standards by which work will be judged. Coordinate below with Division 1 Quality Control (Mock-Up Requirements) Section.

- B. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, texture, pattern and workmanship standards. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.

Specifier Note: Edit paragraph below to specify mock-up size.

1. Mock-Up Size: [Specify mock-up size.].
 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.
- C. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

Specifier Note: Article below should include special and unique requirements.

1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers/packaging with identification labels intact.
- D. Storage and Protection: Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer.

1.07 PROJECT CONDITIONS

- A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

Specifier Note: Coordinate Article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

1.08 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

Specifier Note: Lamboo offers a limited warranty for a 10 year period against color loss and loss of specified physical and mechanical properties of Lamboo® RainScreen™, Elements™ when the product is fabricated and installed in accordance with manufacturer's requirements as well as fabrication/finish/maintenance plan in place and compliance. Contact Lamboo for details of standard and project-specific warranties.

Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents. *Lamboo does not guarantee any recommended finishes or secondary fabrication/installation of its products.

PART 2 PRODUCTS

Specifier Note: Retain Article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal " or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 Engineered Composite LVB(Laminated Veneer Bamboo) Components and Panels

- A. Manufacturer: Lamboo Inc.

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

1. Contact: Lamboo Inc., Springfield, IL.; Telephone: (866) 966-2999; E-mail: info@lamboo.us ; website:

B. Proprietary Product(s):

1. Lamboo® RainScreen™, Elements™

- a. Material: Solid Engineered LVB(Laminated Veneer Bamboo).

Specifier Note: Lamboo RainScreen is available in over 50 colors ranging from Light Neutrals and Mid Tones to Accent Colors and Dark Neutrals. Custom color matching is available for minimum quantity orders of 5000 ft² (465 m²).

- b. Colors: [Submit manufacturer's standard colors for selection by Architect.] [Specify standard color(s) and order number(s)].

1) Panels shall be [Color 1 side] [Color 2 side] [Color both sides].

2) Specifier Note: Lamboo® RainScreen™, Elements™ is available in the standard finish of satin sheen.

3) Finish: [Satin sheen] [Metallic directional] [Gloss] [Rock] [Naturals directional] [Natural Prints directional].

Specifier Note: Specify panel/component size providing joint layout indicated.

- c. Component Standard Sizes: [5" inches × 16'-0" (3650 × 1860 mm)] [120 inches × 60 inches (3050 × 1530 mm)] [100 inches × 73 inches (2550 × 1860 mm)].

d. Panel Standard Sizes: [4 foot x 8 foot] 1220

e. Panel Thickness: [1 inch (25 mm)] [3/4 inch (19 mm)] [1/2 inch (13 mm)] [Select thickness.].

f. Modulus of Elasticity (DIN 53457): 2,900,000 psi (19,340 N/mm²), minimum.

g. Structural Properties: See attached "Mechanical Properties" Document for Lamboo RainScreen.

Specifier Note: Select fire performance below based upon selection of standard or fire resistant (FR) panel:

h. Fire Performance (ASTM E84 [(Type I, Class A))]: Maximum flamespread index of 5.

i. Smoke Development Index: 5.

j. Water Absorption (EN 438-2 (7)): Less than 1.0%.

k. Porosity: Nonporous surface and edges.

l. Microbial Characteristics: Will not support microorganic growth.

m. Cleanability: Resists dirt pickup. Easily cleaned.

n. Color Stability (ISO 105 A02-87 (3000 hr xenon lamp test)): 4 - 5 grey scale.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.03 ACCESSORIES

- A. Optional Panel Corner Profile: 143 inches × 12 inches × 12 inches, radius 3/4 inch (3650 × 300 × 300 mm, 19 mm) [5/16 inch (8 mm)] [3/8 inch (10 mm)] thick × 3/4 inch (19 mm) radius.

- B. Subframe Assembly: Exposed or concealed fastening, as designed.

1. Subframe: Fire Treated Wood Furring Strips: 3/4" x 3-1/2" @ 16" o.c. or 24" o.c. Confirm with Engineering per location.

2. Fasteners for Panel Assembly:

a. #12-11 Stainless Steel, 300 Series.(Typical for secondary installation. Screws will be provided for project by manufacture as specified in shop drawings.

b. RainScreen Clips will be provided by the manufacture in accordance to engineering and shop drawings for loads required per engineering confirmation.

c. Z-clips for panel installations are to be installed per Z-Clip manufacture's recommendations.

d. Spacers if required: [Stainless steel with a diameter and length of 1/2 inch (12.7 mm)].

- C. Installation Materials: Provide [Extruded aluminum trim] [Color matched, corrosion resistant screws] [Color matched, corrosion resistant blind rivets] [Concealed, corrosion resistant metal tongues]

- D. FABRICATION

- E. Factory fabricated solid LVB wall panels/components and sub-frame assembly. Fabricate panels to profile indicated.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise Article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.03 PREPARATION

- A. Surface Preparation: [Specify applicable product preparation requirements.].

Specifier Note: Coordinate Article below with manufacturer's recommended installation details and requirements.

3.04 INSTALLATION

- A. Install furring strips as required per engineering requirements for region and per approved shop drawings.
- B. Install girt/support and anchoring systems true and plumb in order to provide support for wall panels.
- C. Installed panels shall have open joints.
 1. Fabricated Joints: Allow a minimum 1/2 inch (12.7 mm) of free space for movement of panels.
 2. Vertical joints to have furring strip directly behind the joint and clips as specified.
 3. Coordinate exact sizes and dimensions with the drawings, field conditions and approved shop drawings.

Specifier Note: Ensure perforation grade meets the openings per area in accordance with manufacturer's recommendations (2.36 in²/ft).

- D. Cover the opening between bottom of façade and structural wall by ventilation profile/mesh system to prevent animals or other objects from being hidden behind the panels/rain-screen system.

3.05 FIELD QUALITY REQUIREMENTS

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with Owner and manufacturer and specify below. Consult manufacturer for services required. Coordinate paragraph below with Division 1 Quality Assurance Section and Part 1 Quality Assurance Submittals herein. Delete if manufacturer's field service not required.

- A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.06 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

3.07 PROTECTION

- A. Protection: Protect installed product and finish surfaces from damage during construction.

END OF SECTION