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This Manu-Spec® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), 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 precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate product model numbers, styles and types are used in Specifier Notes and in the specification text Article titled "Acceptable Material." Metric conversion, where used, is soft metric conversion.

This Manu-Spec specifies engineered wood I-Joists for use in floor and roof framing. I-Joists are fabricated with laminated veneer lumber (LVL) or solid sawn lumber top and bottom flanges and oriented strand board (OSB) webs. These products are manufactured by Roseburg Forest Products. 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 06 17 33 WOOD I-JOISTS

PART 1 GENERAL

1.1 SUMMARY

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

- A. Related Sections:
1. Permanent Bridging and Bracing, Headers and Supports to Frame Openings, and Sheathing: Division 06 carpentry sections.
 2. Framing Connectors and Hangers: Division 06 carpentry sections.

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 Section 01 42 19 - Reference Standards 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.

1.2 REFERENCES

- A. The Engineered Wood Association (APA):
1. Product Report: PR-L259
- B. ASTM International (ASTM):
1. ASTM D5055 Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.
- C. Canadian Construction Materials Centre (CCMC):

1. CCMC Report Number 13323-R.
- D. Forest Stewardship Council A.C. (FSC):
 1. STD-40-003 Standard for Multi-site Certification of Chain of Custody Operations.
 2. STD-40-004 V2.0 FSC Standard for Chain of Custody Certification.
 3. STD-40-005 V2.1 Standard for Company Evaluation of FSC Controlled Wood.
- E. International Code Council Evaluation Service (ICC-ES):
 1. Report Number: ESR-1251.
- F. National Institute of Standards & Technology:
 1. Voluntary Product Standard PS 2 Performance Standard for Wood-Based Structural-Use Panels.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor, either before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Section 01 33 00 - Submittals Procedures.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate work of this Section with work of other trades for proper time and sequence to avoid construction delays. Comply with Section [01 31 00 - Project Management and Coordination].

Specifier Note: Add additional text to specify unusual or detailed coordination requirements affecting the work results of this Section.

1. [_____].

1.4 ACTION SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Section [01 33 00 - Submittal Procedures].
- B. Product Data: Submit for specified products as follows:
 1. Manufacturer's product data, including descriptions of component materials, dimensions of specified products, design properties, allowable spans and construction details.
 2. Manufacturer's installation instructions.
 3. Catalog pages illustrating products to be incorporated into project.
 4. Material Safety Data Sheets (MSDS).

Specifier Note: Retain the following paragraph only if members are to be designed by the contractor.

- C. Shop Drawings: Submit drawings sealed by the designer indicating member types, sizes, locations and connection details.
- D. Design Data: Submit design calculations sealed by the designer for representative structural members.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 01 Quality Assurance Section.

1.5 INFORMATION SUBMITTALS

Specifier Note: Specify submittal of test reports or evaluation service reports intended to document required tests without repeating the test requirements specified in Division 01.

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].

Specifier Note: Specify submittals intended to document manufacturer installation, storage and other instructions.

- B. Manufacturer's Instructions: Submit manufacturer's [storage] [and] [_____] installation instructions.

- C. Source Quality Control: Submit documentation verifying that components and materials specified in this Section are from a single manufacturer.

1.6 CLOSEOUT SUBMITTALS

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].
 1. Warranty Documentation: Submit warranty documents specified.

1.7 QUALITY ASSURANCE

Specifier Note: Retain paragraph below only if members are to be designed by the contractor.

- A. Designer Qualifications: A professional structural engineer registered in the [State of _____] [state where the project is located].

1.8 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Section [01 61 00 - Common Product Requirements].
- B. Delivery and Acceptance Requirements: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Unload material in accordance with manufacturer's recommendations.
- C. Storage and Handling Requirements: Handle and store materials in accordance with manufacturer's recommendations. Protect from exposure to harmful environmental conditions.
- D. Packaging Waste Management:

Specifier Note: The disposal of packaging waste into landfill sites demonstrates an inefficient use of natural resources and consumes valuable landfill space. Specifying appropriate packaging and construction waste management and disposal procedures may contribute to points required for USGBC's LEED® construction project certification.

Specifier Note: Include the following Subparagraphs to specify information that will provide direction to the Contractor for the disposal of construction waste materials using environmentally responsible methodology other than landfill resources.

1. Separate waste materials for [reuse] [and] [recycling] in accordance with Section [01 74 19 - Construction Waste Management and Disposal].

Specifier Note: USGBC's LEED® certification includes credits for the diversion of construction waste from landfill. Diversion can be tracked by either weight or volume but must be consistent for all materials. Manufacturer may reclaim packaging and delivery materials for recycling.

2. Remove packaging materials from site and dispose of at appropriate recycling facilities.
3. Collect and separate for disposal [paper] [plastic] packaging material [in appropriate onsite bins] for recycling.
4. Fold metal and plastic banding; flatten and place in designated area for recycling.

Specifier Note: Add additional Subparagraphs to include pallets, crates, padding and other packing materials that are typically associated with the specified products.

5. Remove:
 - a. Pallets from site [and return to supplier or manufacturer].
 - b. [_____].

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 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.

2.1 WOOD I-JOISTS

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.

- A. Manufacturer: Roseburg Forest Products.
1. Contact: 10599 Old Hwy 99 South, Dillard, OR 97432; Telephone: (800) 245-1115; Fax: (541) 679-2612; E-mail: ewpsales@rfpco.com; website: www.roseburg.com.

Specifier Note: Retain joist(s) below to conform to project requirements. If more than one is retained, create designators and coordinate with the drawings. If joists are to be designed by the contractor, delete the next two paragraphs.

2. Single Source Responsibility: Provide components and materials specified in this section from a single manufacturer.

Specifier Note: Substitution procedures must appear either in the Contract Conditions or in Section 01 25 00 - Substitution Procedures. Do not include substitution procedures here.

3. Substitution Limitations:
 - a. Substitutions: [In accordance with [Contract Conditions] [Section 01 25 00 - Substitution Procedures]] [No substitutions permitted].

Specifier Note: Include an overall description of the system, assembly, product or material. Include required properties or characteristics that do not obviously belong under other titles. Examples: Configuration, size and color.

- B. Description:

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Contract Conditions and Section 01 41 00 - Regulatory Requirements. Repetitive statements should be avoided.

1. Regulatory Requirements:
 - a. In accordance with Section [01 41 00 - Regulatory Requirements].

Specifier Note: Select appropriate code reference(s) below.

- b. Comply with ICC-ES Report Number ESR-1251.
- c. Comply with CCMC Report Number 13323-R.
- d. Comply with APA Product Report PR-L259.
- e. [_____].
2. Sustainability Characteristics:
 - a. Comply with the following FSC Standards:
 - 1) STD-40-003.
 - 2) STD-40-004 V2.0.
 - 3) STD-40-005 V2.1.
 - b. [_____].
3. Compatibility:
 - a. Ensure components and materials are compatible with specified accessories and adjacent materials.

Specifier Note: The term "Design Criteria" is used when describing the intended characteristics of a product for which the Contractor is assigned design responsibility. Retain Paragraph below only if members are to be designed by the contractor.

- C. Design Criteria:

Specifier Note: Select and/or insert loading criteria to conform to project requirements.

1. Design Live [and Dead] Load for Floors: [] psf (kg/m²) with live load deflection limited to [¹/₆₀₀] [¹/₄₈₀] [¹/₃₆₀] [] of span or a maximum of [] inches of live load deflection and total load deflection limited to [¹/₃₆₀] [¹/₂₄₀] [¹/₁₈₀] of span or a maximum of [] inches of total load deflection.
2. Design Live [and Dead] Load for Roofs: [] psf (kg/m²) with live load deflection limited to [¹/₄₈₀] [¹/₃₆₀] [¹/₂₄₀] [] of span or a maximum of [] inches of live load deflection and total load deflection limited to [¹/₃₆₀] [¹/₂₄₀] [¹/₁₈₀] of span or a maximum of [] inches of total load deflection.

Specifier Note: Retain below to establish criteria for the accommodation of ducts and/or other equipment.

3. Joist Depth: Not less than [] inches (mm).

Specifier Note: Refer to Roseburg ICC-ES code report ESR 1251 for information regarding fire-rated floor and ceiling assemblies.

4. Assembly Fire Resistance Rating: [1 hour] [Specify rating].

2.2 MATERIALS

A. I-Joist: To ASTM D5055.

1. Type: [RFPI 20] [RFPI 40S] [RFPI 400] [RFPI 40] [RFPI 60S] [RFPI 70] [RFPI 80S] [RFPI 90] [RFPI 700] [RFPI 900].
2. Height: [9¹/₂ inches (241 mm)] [11⁷/₈ inches (302 mm)] [14 inches (356 mm)] [16 inches (406 mm)] [18 inches (457 mm)] [20 inches (508 mm)] [22 inches (559 mm)] [24 inches (610 mm)].
3. Flange Material: [Laminated Veneer Lumber (LVL)] [Solid sawn].
4. Web Material: Oriented Strand Board (OSB) in accordance with PS 2.
5. Adhesive: Meets requirements of ASTM D5055.

2.3 ACCESSORIES

Specifier Note: Retain fastener type below to conform to project requirements.

A. Fasteners: [Galvanized steel] [Stainless steel], sized to suit application.

1. Acceptable Manufacturers:
 - a. Simpson Strong-Tie.
 - b. USP Structural Connectors.

PART 3 EXECUTION

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.

3.1 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrates previously installed under other sections or contracts are acceptable for product installation in accordance with manufacturer's instructions prior to engineered wood I-joist installation.
 1. Inform [Owner] [Architect] [Consultant] of unacceptable conditions immediately upon discovery.
 2. Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval from [Owner] [Architect] [Consultant]].
 3. [].

3.2 INSTALLATION

- A. Coordinate installation of I-joists in accordance with Section [01 73 19 - Installation].
- B. Coordinate I-joist installation with work of other trades for proper time and sequence to avoid construction delays.
- C. Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions, for installation.

- D. Install I-joists plumb, level and as indicated.
- E. Fasten joists to supporting framing as recommended by the I-joist manufacturer and hanger manufacturer.
- F. Provide temporary bracing as recommended by the manufacturer to hold joists in position until permanently secured.
- G. Cut openings in joist webs only as allowed by the manufacturer.

3.3 SITE TOLERANCES

- A. Joists: Not more than $\frac{1}{2}$ inch (12.7 mm) from indicated position.

3.4 CLEANING

- A. Perform cleanup in accordance with Section [01 74 00 - Cleaning and Waste Management] and Section [01 74 13 - Progress Cleaning].
- B. Upon completion and verification of performance of installation, remove surplus materials, rubbish, tools and equipment in accordance with Section [01 74 23 - Final Cleaning].

Specifier Note: Specify special measures needed to minimize waste, collect recyclable waste and dispose of or recycle field-generated construction waste created during demolition, construction or final cleaning.

- C. Waste Management:
 - 1. Coordinate recycling of waste materials with in accordance with Section [01 74 19 - Construction Waste Management and Disposal].
 - 2. Collect recyclable waste and dispose of or recycle field generated construction waste created during demolition, construction or final cleaning.
 - 3. Remove recycling containers and bins from site.

END OF SECTION