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SECTION 074643.13 - ENGINEERED WOOD SIDING

TIPS:

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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Engineered wood siding.
 - a. Panel and lap siding.
 - b. Shake siding.
 - c. Vertical siding.
 - d. Trim and fascia.
 - e. Soffit.

2. Accessories.

B. Related Requirements:

1. Section 042000 "Unit Masonry" for CMU substrate support framing.
2. Section 042200 "Concrete Unit Masonry" for CMU substrate support framing.
3. Section 054000 "Cold-Formed Metal Framing" for metal stud substrate support framing.
4. Section 061000 "Rough Carpentry" for wood stud substrate support framing.
5. Section 061600 "Sheathing" for wall sheathing substrates.
6. Section 072100 "Thermal Insulation" for continuous insulation behind exterior cladding.
7. Section 072500 "Weather Barriers" for water-resistive barriers.
8. Section 072713 "Modified Bituminous Sheet Air Barriers" for vapor-retarding, modified bituminous sheet type air barriers.
9. Section 072715 "Nonbituminous Self-Adhering Sheet Air Barriers" for vapor-retarding and vapor-permeable nonbituminous sheet type air barriers.
10. Section 072726 "Fluid-Applied Membrane Air Barriers" for vapor-retarding and vapor-permeable fluid-applied air barriers.
11. Section 079200 "Joint Sealants" for sealants at edges and transitions between composite composition siding system and exterior cladding.

1.2 DEFINITIONS

- A. Treated Engineered Wood: Engineered wood products manufactured for exterior use treated with manufacturer's proprietary process to resist fungal decay and termite damage.

1.3 COORDINATION

- A. Coordinate engineered wood siding installation with flashings, trim, and construction of other adjoining work to ensure proper sequencing, construction progress, and to provide a leak resistant, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

- A. Coordinate with Section 013100 "Project Management and Coordination."
- B. Preinstallation Conference: Conduct conference at **[Project site]** <Insert location>.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and

installations that have preceded or will follow, to attend the meeting. Advise Architect[, **Construction Manager**] [, and **Owner's Commissioning Authority**] of scheduled meeting dates and times a minimum of 14 days prior to meeting.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Schedule.
 - b. Responsibilities
 - c. Critical path items.
 - d. Submittals.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product and component included in engineered wood siding system. Include the following:
 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of product and accessory included in siding system.
 2. Installation methods, including nailing patterns.
 3. Siding manufacturer's requirements for products to be installed by others.
 4. Maintenance and periodic inspection recommendations.
- B. Shop Drawings: For engineered wood siding.
 1. Include plans, elevations, sections, and attachment details.
 2. Detail expansion joints, material joints, angle changes, flashings, and abutment to adjacent Work.
- C. Samples for Initial Selection: For engineered wood siding, including related accessories.
- D. Samples for Verification: For each type, color, texture, and pattern required.
 1. **6-inch-** (152-mm-) long Sample of engineered wood siding and trim.
- E. Sustainable Design Submittals:
 1. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
 2. Environmental Product Declaration (EPD): For each product.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualifications: For Installer.
- B. Product Test Reports: For each product, APA[**and HUD**] tests performed by a qualified testing agency.
- C. Evaluation Reports: For engineered wood siding system, from ICC-ES in compliance with AC321.

- D. Sample warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of product, including related accessories, to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Installers trained by siding manufacturer.
- A. Panel to comply with HUD-UM-40c - HUD Building Product Standards and Certification Program for Plywood and Other Performance Rated Wood-Based Structural-Use Panels.

1.9 MOCKUPS

- A. Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 - 1. Build mockup of typical wall area [**as indicated on Drawings**] <Insert size>, including[**corner,**] trim, [**fascia,**] supports, attachments, and accessories.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components and other manufactured items so as not to be damaged or deformed. Package components for protection during transportation and handling with manufacturer's name and identification of products.
- B. Unload, store, and erect components in a manner to prevent bending, warping, twisting, and surface damage. Maintain slip sheet until piece is being prepared for installation.
- C. Store components on flat surfaces clear of the ground. Store under roof or covered with suitable weathertight and ventilated covering, and in accordance with manufacturers' written instructions.

1.11 WARRANTY

- A. Manufacturer's Trim and Siding Limited Warranty: Manufacturer agrees to compensate the owner for the material cost of the affected product to repair or replace components of engineered wood siding against substrate damage within specified warranty period.

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1. Substrate damage is defined as buckling, overlay Issues and ZB resistance issue caused by manufacturing defect.
 2. Hail damage is defined as a crack or chip in the surface overlay, or product substrate dents exceeding **3/8 inch (10 mm)** in length or diameter and is caused by hail.
 3. Limited Warranty Period: 50 years from date of installation and transferred to Owner on date of Substantial Completion.
- B. Manufacturer's Trim and Siding Prefinish Limited Warranty: Manufacturer agrees to compensate the owner for the material cost of the affected product to repair or replace components of prefinished engineered wood siding against finish and substrate damage within specified warranty period.
1. Substrate damage is defined as buckling, overlay Issues and ZB resistance issue caused by manufacturing defect.
 2. Hail damage is defined as cracks or chips in the surface overlay or dent in the substrate of the product that exceeds **3/8 inch (10 mm)** in length or diameter, and is caused by hail.
 3. Finish damage is defined as, under normal conditions and use, discoloring due to chalking, peeling, blisters, cracks; erosion to the extent of exposing the substrate; or yellowing or color fade change from light exposure not to exceed 5 Delta E CMC (2:1).
 4. Limited Warranty Period for Substrate: 50 years from date of installation and transferred to Owner on date of Substantial Completion.
 5. Limited Warranty Period for Finish: 15 years from date of installation and transferred to Owner on date of Substantial Completion.
- C. Manufacturer's Accessories and Non-Standard Applications Limited Warranty: Manufacturer agrees to compensate the owner for the material cost of the affected product to repair or replace components of manufacturer's accessories and when used in approved non-standard applications against substrate and finish damage within specified warranty period.
1. Substrate damage is defined as buckling, overlay Issues and ZB resistance issue caused by manufacturing defect.
 2. Hail damage is defined as cracks or chips in the surface overlay or dent in the substrate of the product that exceeds **3/8 inch (10 mm)** in length or diameter, and is caused by hail.
 3. Finish damage is defined as, under normal conditions and use, discoloring due to chalking, peeling, blisters, cracks; erosion to the extent of exposing the substrate; or yellowing or color fade change from light exposure not to exceed 5 Delta E CMC (2:1).
 4. Limited Warranty Period for Substrate and Finish: 10 years from date of installation and transferred to Owner on date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Provide components and materials specified in this Section from single manufacturer for a complete and compatible assembly.

2.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide engineered wood siding system tested to APA PS2 and PRP 108, in compliance with **[IBC Section 2308.9.3, Table 2308.9.3(5)] [IRC Section R602.10, Table R602.10.2]**, and certified to be without permanent deformation or failure of structural members in accordance with design wind velocities for Project geographic location and probability of occurrence based on data from wind velocity maps provided in ASCE 7 and as approved by authorities having jurisdiction (AHJ).
1. Design Loads: **[As indicated on Drawings] <Insert design loads>**.
- B. Structural: Test in accordance with FL TAS 202 as follows:
1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
 2. When tested at **[150] <Insert number>** percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding **[0.2] <Insert number>** percent of span.
 3. Minimum test duration in accordance with FL TAS 202 is 10 seconds, which is historically U.S. practice.
 4. Test Durations: As required by design wind velocity, but not less than **[10] <Insert number>** seconds.
- C. Fire-Resistance Performance: Comply with ASTM E119 for testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency acceptable to AHJ.
1. Surface-Burning Characteristics: Provide engineered wood siding system with a Class C flame-spread index of 76 to 200 or less and a smoke-developed index of 0 to 450 or less when tested in accordance with ASTM E84 and UL 723.
- D. Thermal Movement Performance: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.
- E. Certified Wood: Wood products to be labeled in accordance with the AF&PA's Sustainable Forestry Initiative, or be certified and labeled in accordance with the standards of the Programme for Endorsement of Forest Certification.
- F. Certified Wood: Wood products to be certified in accordance with the American Tree Farm System's "AFF Standard," the AF&PA's Sustainable Forestry Initiative, or the standards of the Programme for Endorsement of Forest Certification.
- G. Composite Wood Products: Products to be made using ultra-low-emitting formaldehyde resins as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products" or made with no added formaldehyde.
- H. Composite Wood Products: Products to be made without added urea formaldehyde.

2.3 ENGINEERED WOOD SIDING

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP® SmartSide® Trim & Siding and ExpertFinish® Trim & Siding or comparable product by one of the following:
1. Allura.
 2. James Hardie.
 3. <Insert manufacturer's name>.
- B. Treated Engineered Wood Lap Siding: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges sealed for moisture resistance. Manufacturer's acrylic finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide Lap Siding and ExpertFinish Lap & Siding, [38] [76] Series or comparable product.
 2. Thickness: [0.354 inch (8.9 mm)] [0.418 inch (10.6 mm)] total thickness.
 3. Width: [5.84 inches (148 mm)] [6.84 inches (174 mm)] [7.84 inches (199 mm)] [11.84 inches (301 mm)].
 4. Length: [12 ft. (3.7 m)] [16 ft. (4.9 m)].
 5. Color: [As selected by Architect from manufacturer's full range] <Insert color>.
 6. Texture: [Smooth finish] [Cedar texture].
- C. Treated Engineered Wood Panel Siding: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges beveled and sealed for moisture resistance. Manufacturer's acrylic finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide [Panel] [Vertical Panel] Siding, [38] [76] [190] Series or comparable product.
 2. Thickness: [0.354 inch (8.9 mm)] [0.418 inch (10.6 mm)] [0.578 inch (14.6 mm)].
 3. Width: [47.88 inches (1216 mm)] [48.56 inches (1234 mm)].
 4. Length: [6 ft. (1.8 m)] [7 ft. (2.1 m)] [8 ft. (2.4 m)] [9 ft. (2.7 m)] [10 ft. (3.0 m)] [12 ft. (3.6 m)].
 5. Edges: [Shiplap] [Square].
 6. Grooves: Channel grooves at [4 inches (102 mm)] [8 inches (203 mm)] o.c.
 7. Color: [As selected by Architect from manufacturer's full range] <Insert color>.
 8. Texture: [Smooth finish] [Cedar texture].
- D. Treated Engineered Wood Cedar Shake Siding: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges beveled and sealed for moisture resistance. Manufacturer's acrylic finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide Cedar Texture Shake Siding and LP SmartSide ExpertFinish Cedar Texture Shake Siding, 38 Series or comparable product.
 2. Thickness: 0.354 inch (8.9 mm).
 3. Width: 11.625 inches (295 mm).

4. Length: **48.63 inches (1.2 m)**.
 5. Edges: Shiplap.
 6. Color: **[As selected by Architect from manufacturer's full range]** <Insert color>.
 7. Texture: Cedar texture with no knots; reversible **[staggered]** **[straight]** edge.
- E. Treated Engineered Wood Soffit: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges beveled and sealed for moisture resistance. Manufacturer's acrylic finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP® SmartSide® Soffit, **[38]** **[76]** **[190]** Series or comparable product.
 2. Thickness: **[0.354 inch (8.9 mm)]** **[0.418 inch (10.6 mm)]** **[0.578 inch (14.6 mm)]**.
 3. Width: **[11.94 inches (303 mm)]** **[15.94 inches (405 mm)]** **[23.94 inches (608 mm)]** **[47.88 inches (1216 mm)]**.
 4. Length: **[8 ft. (2.4 m)]** **[16 ft. (4.8 m)]**.
 5. Edges: Square.
 6. Color: **[As selected by Architect from manufacturer's full range]** <Insert color>.
 7. Texture: **[Smooth finish]** **[Cedar texture]** and **[unvented]** **[vented]**.
- F. Treated Engineered Wood Trim **[and Fascia]**: Provide manufacturer's standard trim, **[fascia board,]** angles, and similar components at corners, transitions, and rough openings meeting the performance requirements.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide **[Trim]** **[Fascia]** and LP SmartSide ExpertFinish **[Trim]** **[Fascia]**, **[190]** **[440]** **[540]** Series or comparable product.
 2. Thickness: **[0.578 inch (14.6 mm)]** **[0.675 inch (17.1 mm)]** **[0.970 inch (24.6 mm)]** total thickness.
 3. Width: **[1.50 inches (38 mm)]** **[2.5 inches (64 mm)]** **[3.5 inches (89 mm)]** **[4.5 inches (114 mm)]** **[5.50 inches (140 mm)]** **[7.21 inches (183 mm)]** **[9.21 inches (234 mm)]** **[11.21 inches (285 mm)]**.
 4. Length: **16 ft. (4.9 m)**.
 5. Edges: Square.
 6. Color: **[As selected by Architect from manufacturer's full range]** <Insert color>.
 7. Texture: **[Smooth finish]** **[Cedar texture]**.
- G. Treated Engineered Wood Vertical Siding: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges sealed for moisture resistance. Manufacturer's acrylic primer finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide Vertical Siding, 38 Series or comparable product.
 2. Thickness: **0.354 inch (8.9 mm)**.
 3. Width: **15.94 inches (405 mm)**.
 4. Length: **16 ft. (4.9 m)**.
 5. Edges: Square.
 6. Color: **[As selected by Architect from manufacturer's full range]** <Insert color>.
 7. Texture: **[Smooth finish]** **[Cedar texture]**.

- H. Treated Engineered Wood Outside Corners: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges sealed for moisture resistance. Manufacturer's acrylic primer finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP® SmartSide® Outside Corners and LP SmartSide ExpertFinish® Outside Corners 540 Series or comparable product.
 2. Thickness: 0.970 inch (24.6 mm) total thickness.
 3. Width: [3.50 inches (89 mm)] [5.50 inches (140 mm)].
 4. Length: 10 ft. (3.0 m).
 5. Edges: Square.
 6. Color: [As selected by Architect from manufacturer's full range] <Insert color>.
 7. Texture: Cedar texture.
- I. Treated Engineered Wood J-Block: Exterior-grade, phenolic resin-saturated, paper overlay laminated to EPA-registered zinc-borate preservative-treated engineered wood siding. Exposed edges sealed for moisture resistance. Manufacturer's standard acrylic latex primer finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide J-Block and LP SmartSide ExpertFinish J-Block or comparable product.
 2. Thickness: 0.970 inch (24.6 mm) total thickness.
 3. Width: 7.21 inches (183 mm).
 4. Length: 7.21 inches (183 mm).
 5. Edges: Square.
 6. Color: [As selected by Architect from manufacturer's full range] <Insert color>.
 7. Texture: Cedar texture.
- J. Treated Engineered Wood Mini Split: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges sealed for moisture resistance. Manufacturer's acrylic primer finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide Mini Split and LP SmartSide ExpertFinish Mini Split or comparable product.
 2. Thickness: 0.970 inch (24.6 mm) total thickness.
 3. Width: 7.21 inches (183 mm).
 4. Length: 6.75 inches (171 mm).
 5. Edges: Square.
 6. Color: [As selected by Architect from manufacturer's full range] <Insert color>.
 7. Texture: Cedar texture.

2.4 ACCESSORIES

- A. Fasteners: Hot-dipped galvanized nails, with 0.092-inch (2.3-mm) diameter shank, in length required to penetrate [wood structural panels and]structural framing a minimum of 1-1/2 inches (38 mm), as recommended in writing by composite siding system manufacturer suitable for and compatible with system materials. Larger diameter fasteners may be required depending

on wind pressure, wind speed, and wind exposure category limitations for structures in product approvals PR-N124 or ESR-1301.

- B. Sealant: ASTM C920, minimum Class 25 sealant.
- C. Water-Resistive Barrier: ASTM D226 or other approved water-resistive barrier.
- D. Air Barrier: ASTM E1677.
 - 1. Seam Tape: Air barrier manufacturer's standard product.
- E. Non-Compressible Drainable Housewrap:
 - 1. Non-compressible type with a minimum 40-mil (1-mm) drainage gap not reduced by force of fastening during siding installation.
 - 2. Drainable housewrap type that removes bulk water by creating a minimum 40-mil (1-mm) drainage gap (air gap) at individual measurement points between housewrap and back of siding.
- F. Flashing:
 - 1. Provide flashing at window and door heads and where indicated on Drawings. Refer to Division 07 for sheet metal flashing.
 - 2. Material: Aluminum.
 - a. Finish: Siliconized polyester coating.
 - b. Finish: High-performance organic finish.
 - c. Finish: Factory-prime coating.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, engineered wood siding system supports, and other conditions affecting performance of the Work.
 - 1. Examine wall framing to verify that support members and anchorage have been installed within alignment tolerances required by engineered wood siding manufacturer.
 - 2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by engineered wood siding manufacturer.
 - a. Verify that air and moisture barrier has been installed over sheathing substrate to prevent air infiltration and water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install engineered wood siding in accordance with manufacturer's written instructions in orientation, sizes, and locations indicated. Anchor engineered wood siding and other components of the Work securely in place.
1. Shim or otherwise plumb substrates receiving engineered wood siding system.
 2. Flash engineered wood siding at perimeter of all openings.
 3. Locate and space fastenings in uniform vertical and horizontal alignment.
 4. Seal engineered wood substrates exposed to weather to prevent moisture intrusion and water buildup.
 - a. Seal around penetrations.
 - b. Seal each exposed cut of siding and trim. It is not recommended to field spray-applied coatings on cuts.
 - c. Seal each butt joint from weather by covering with joint moldings, sealant, or factory prefinished ends.
 5. Install flashing and trim as engineered wood siding work proceeds.
 6. Align bottoms of engineered wood siding.
 7. Provide weathertight escutcheons for pipe- and conduit-penetrating engineered wood siding system.
- B. Metal Protection: Where dissimilar metal flashings contact each other or corrosive substrates, protect against galvanic action as recommended in writing by siding manufacturer.
- C. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
- D. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that are permanently watertight.
1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to achieve water resistant performance.
- E. Replace engineered wood siding components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074643