SECTION 074616 – ALUMINUM SIDING AND SOFFITS

ALL LIBRARIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Aluminum siding.
2. Aluminum soffits.
3. Aluminum trim and accessories.

B. Related Sections:

1. Section 054000 "Cold-Formed Metal Framing" for support of aluminum siding and soffits.
2. Section 061000 "Rough Carpentry" for framing and furring, for support of aluminum soffits.
3. Section 061600 “Sheathing”.
4. Section 072100 "Thermal Insulation" for insulation installed behind siding.
5. Section 079200 "Joint Sealants" for sealants used in conjunction with aluminum siding installation.

1.3 REFERENCES

A. ASTM D 958 – Practice for Determining Temperatures of Standard ASTM Molds for Test Specimens of Plastics.

B. AAMA 2605-05 – Voluntary Specification, Performance requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

C. AAMA 2604 – Voluntary Specification, Performance requirements and Test Procedures for High Performing Organic Coatings on Aluminum Extrusions and Panels.

D. AAMA 2603 – Voluntary Specification, Performance requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.

E. ASTM E2768-11 – Standard Test Method for Extended Duration Surface Burning Characteristics for Building Materials (30 min Tunnel Test). Results: Zero Flame Spread, Smoke Developed Index of 5. Meets criteria for Class A fire rating.

F. ASTM E136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

G. CAN/ULC S114 – Standard method of test for determination of non-combustibility in building materials.

1.4 PERFORMANCE REQUIREMENTS

A. Components: Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall as calculated in accordance with applicable code.

B. Movement: Accommodate movement within system without damage to components or movement within system; movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; deflection of structural support framing.

C. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, siding and soffit Installer, aluminum siding manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects siding and soffits, including installers of doors, windows, and louvers.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to siding and soffit installation, including manufacturer's written instructions.
4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affect aluminum siding.
6. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
7. Review temporary protection requirements for aluminum siding and soffit assembly during and after installation.
8. Review of procedures for repair of aluminum siding and soffit damaged after installation.
9. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Installation methods.

B. Shop Drawings:

1. Include fabrication and installation layouts of siding and soffit; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

C. Samples for Verification: For each type of exposed finish, prepared on Samples of size indicated below:

1. Minimum size 2 inches (51 mm) by 3-1/2 inches (89 mm), representing actual product, color, and gloss.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Manufacturer's Certificates: Certify products meets or exceed specified requirments.

D. Sample Warranties: For special warranties.

1.8 CLOSEOUT SUBMITTALS

A. Maintenance Data: For aluminum siding and soffit to include in maintenance manuals.

1.9 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum five (5) years' experience producing aluminum finishes of the type specified and AkzoNobel, AAMA 2605 and 2605 Certified.

B. Installer: Company specializing in performing Work of this section with minimum three (3) years' documented experience.

C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockup of typical aluminum siding and soffit areas, including corner, 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, siding and soffit panels, and other manufactured items so as not to be damaged or deformed. Package aluminum siding and soffit panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack aluminum siding and soffit panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store aluminum siding and soffit panels to ensure dryness, with positive slope for drainage of water. Do not store aluminum siding and soffit panels in contact with other materials that might cause staining, denting, or other surface damage.

1.11 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by Manufacturer for optimum results. Do not fabricate products under environmental conditions outside Manufacturer’s absolute limits.

B. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of aluminum siding and soffit panels to be performed according to manufacturers' written instructions and warranty requirements.

1.12 COORDINATION

A. Coordinate aluminum siding and soffit installation with windows. louvers, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.13 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum siding and soffit systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including rupturing, cracking, or puncturing.

b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace aluminum siding and soffit panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units, standard or woodgrains, when tested according to AAMA 2604.
b. Chalking in excess of a No. 8 rating when tested according to AAMA 2605.
c. Cracking, checking, peeling, or failure of paint to adhere to bare aluminum.

2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E 283 at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft. (75 Pa).

C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 331 at the following test-pressure difference:

1. Test-Pressure Difference: 2.86 lbf/sq. ft. (137 Pa).

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg. F (67 deg. C), ambient; 180 deg. F (100 deg. C), material surfaces.

E. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 MATERIAL MANUFACTURERS

A. Acceptable Manufacturers:

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings, 6" Channel Siding and Soffit, or comparable product by one of the following:

   a. Mayne Coatings Corp., which is located at: 27575-50th Ave., Langley, BC; Canada V4W0A2; Tel: 604-607-6630; Fax: 604-607-6680; Email: requestinfo@longboardproducts.com; Web: www.longboardproducts.com

2. Substitutions: Not permitted.

2.3 MATERIALS

A. Extruded Aluminum Siding and Soffits: Longboard Wood Grain Aluminum Siding and Soffits with Alluminate bonded film finish is extruded aluminum with integrated venting system.

1. Size:

   a. 101973 6" Channel Siding & Soffit – 8 pieces per box.

2. Accessories: Prefinished aluminum: Provide with matching accessories and starter strips as required.

   a. 101957 2.5-inch perforated vent strip 12-foot length.
   b. 102304 2.5-inch V groove siding and soffit 12-foot length.
   c. 102000 J track 12-foot length.
   d. 102044 Wide Starter Strip 12-foot length.
   e. 102324 Inside Corner.
   f. 102305 Outside Corner.
   g. 102611 Finish Base & Cap (2 piece set).
   h. 102612 Base & U Cap (2 piece set).
   i. 102613 Base & Flat Cap (2 piece set).
   j. 102044 Powder Coated Wide Starter Strip.
   k. 102355 Quick Screen Clip.

2.4 FINISHES

A. Pretreatment: E-CLPS Chrome Free five stage aluminum pretreatment system. Complies with AAMA 2603, AAMA 2604, and AAMA 2605 Superior Performance Standard and meets EPA, OSHA, State and Local environmental requirements and contain no chromates, cyanides or other heavy metals. Waste treatment is usually a simple Ph neutralization and disposal to the sanitary sewer.

B. Super Durable Powder Coatings: Alluminate Premium Wood Finishes use a polyurethane powder coat with ink based wood grain patterns sublimated into the base powder effectively tattooning the powder. The combined effect creates all the aesthetic aspects of real wood while offering the same environmental advantages of powder coated finishes.

1. Wood Grained

   a. Color: Light Cherry 1406/01-716.

2.5 FABRICATION

A. General: Fabricate and finish aluminum siding and soffit panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Prepare surfaces, pre-treat and coat components in accordance with AAMA 2604 and 2605 Quality Standards and applicable European standards for the coating material specified.

D. Wrap and package coated components using method suitable for transit and covered site storage without damage.

2.6 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Aluminum Panels and Accessories:

   1. Super Durable Powder Coating: Alluminate Premium Wood Finishes use a polyurethane powder coat with ink wood grain patterns sublimated into the base powder effectively tattooning the powder. The combined effect creates all the aesthetic aspects of real wood while offering the same environmental advantages of powder coated finishes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

   1. Do not begin installation until colors have been verified.

2. Verify framing members are ready to receive panel system.
3. If preparation is the responsibility of another Installer, notify Architect of unsatisfactory preparation before proceeding.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of aluminum siding and soffit panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the Manufacturer for achieving the best result for the material under the project conditions.

3.3 INSTALLATION

A. Install in accordance with Manufacturer's installation instructions.

B. Barrier Protection: Do not install over cementitious materials, dissimilar metals or pressure treated material without adequate barrier protection

1. Install building paper horizontally on walls to receive metal siding.
2. Weather lap edges 6 inches (150 mm) and ends minimum 6 inches (150 mm).
3. Stagger vertical joints of each layer.
4. Securely, staple, nail in place.

C. Fasten siding to structural supports; aligned, level, and plumb.

D. Locate joints over supports.

E. Install expansion control joints where indicated.

F. Use concealed fasteners unless otherwise approved by the Architect.

G. Install soffits, and accessories in accordance with best practice, with all joint members plumb and true.

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect completed aluminum siding and soffit panel installation, including accessories.

B. Remove and replace aluminum siding and soffit panels where inspections indicate that they do not comply with specified requirements.

3.5 CLEANING AND PROTECTION

A. After application of soffits, clean as necessary to remove all fingerprints and soiled areas.

B. Upon completion of soffit application, clean entire area, removing all scrap, packaging, and unused materials related to this Work.

C. Protect installed products until completion of the project.

D. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 074616