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Description générée automatiquement

SPECIFIER NOTE: The purpose of this guide specification is to assist the specifier in correctly specifying aluminum siding with a digitally printed finish and their installation. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact MAIBEC to assist in appropriate product selections and for detailing assistance. Red text in brackets indicates a selection needs to be made.

SECTION **07 42 13**

**ALUMINUM SIDING**

1. GENERAL
   * + 1. SECTION INCLUDES [EDIT AS REQUIRED]
          1. Specifications for aluminum panels over extrusion, including performance requirements, quotation, quality assurance, delivery, storage, handling, and site conditions.
          2. Painted aluminum accessories

[Screw cover]

* + - 1. RELATED SECTIONS
         1. Section 05 40 00 - Cold Bent Steel
         2. Section 07 21 00 - Thermal Insulation
         3. Section 07 27 00- Air Barrier
         4. Section 07 62 00 - Sheet Metal Accessories and Flashings
         5. Section 07 92 00 - Sealing Compounds
      2. REFERENCES 
         1. Codes

National Research Council of Canada (NRC)

National Building Code of Canada 2020 (NBC-2020)

International Code Council (ICC)

International Building Code 2021 (IBC-2021)

* + - * 1. Canadian Standards Association (CSA)

CSA-S157: Strength Design in Aluminum

* + - * 1. American Architectural Manufacturers Association (AAMA) (FGIA)

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

AAMA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels

* + - * 1. American Society for Testing and Materials (ASTM)

ASTM E330/E330M-14(2021): Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

ASTM D3359: Standard Test Methods for Rating Adhesion by Tape Test.

ASTM D3363: Standard Test Method for Film Hardness by Pencil Test.

ASTM D968: Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.

ASTM D2247: Standard Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity.

ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus.

ASTM G7: Standard Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials.

ASTM D523: Standard Test Method for Specular Gloss.

ASTM B244: Standard Test Method for Measurement of Thickness of Anodic Coatings on Aluminum and of Other Nonconductive Coatings on Nonmagnetic Basis Metals with Eddy-Current Instruments.

ASTM B209-10: Standard Specification for Aluminum and Aluminum Alloy Sheet and plate

ASTM B221-12: Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Profiles and Tubes

* + - * 1. Underwriters Laboratories Canada (ULC)

ULC-S102: Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

ULC-S114: Standard Method of Test for Determination of Non-Combustibility in Building Materials.

ULC-S135: Standard Test Method for the Determination of Combustibility, Parameters of Building Materials Using an Oxygen Consumption Calorimeter.

* + - * 1. Florida Building Code (FBC)

Florida Product Approval No. FL 46743

* + - * 1. National Fire Protection Association (NFPA)

NFPA 285: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components.

* + - 1. PERFORMANCE REQUIREMENTS
         1. Compatible with drained and back ventilated rainscreen system.
         2. Design cladding to span continuously over structural supports with fastening to structural supports to sustain factored loads in accordance with authority having jurisdiction.
         3. Use water-resistant barriers, steel or aluminum sub-girts, pre-painted aluminum or galvanized steel flashings, and extruded aluminum panels with hardware in accordance with defined criteria.
      2. SUBMITTALS [EDIT AS REQUIRED]
         1. Action Submital - Submit required documents in accordance with the general conditions stated in section [01 33 00]

Product Data, include the following:

Technical data sheet

Installation Instructions or typical details

Aluminum material information

Standard drawing details and application

Drawings must show product dimensions and sectional views, fastening methods, and wall elevations, specify materials and finishes, provide details for bays, window heads, jambs, and sills, as well as canopies, joint coverings and roof edgings.

Samples

Submit two (2) 300 mm × 300 m wall siding samples, which must correspond to the suggested materials, colours and finishes.

* + - * 1. Informational submittals

Product Test Reports: Submit all relevant tests results performed by a qualified testing agency.

* + - * 1. Closeout submittals

Maintenance data: For each type of product, including related accessories. Include in Maintenance manuals.

Warranty: Executed copy of the manufacturer’s warranty.

* + - 1. QUALITY ASSURANCE [EDIT AS REQUIRED]
         1. Coordinate requirements with Section 01 45 00 “Quality Control”.
         2. *Test Reports: Certified testing reports showing compliance with specified performance characteristics and physical properties, including laboratory reports showing compliance with specified tests and standards.*
         3. Manufacturer’s qualifications:

Manufacturers must prove that they have been certified or pre-certified by their powder coating provider to apply their product

Through their powder coating supplier, manufacturers must be able to provide a warranty ranging from 15 to 30 years on finishes, under certain conditions, depending on the chosen manufacturer and coating standard (AAMA 2604 or AAMA 2605).

Manufacturers must be able to produce orders without outsourcing the product’s shaping and coating processes, to the extent that orders meet with data sheet specifications and recommended standard sizes and shapes.

Manufacturers must be able to deliver the first produced panels within ten (10) working days after having received measurements and technical drawings from installers where applicable.

* + - * 1. Installer Qualifications: Engage experienced installer, with a minimum of five years’ experience, who has completed systems similar in material, design, and extent to that indicated for Project and with record of successful performance.
        2. Pre-installation meeting:

Conduct meeting at Project Site [Insert location].

Review project drawings and requirements, manufacturer’s installation instructions, manufacturer’s warranty requirements and any relevant manufacturer’s documentation.

Review wall framing for potential interference and conflicts; coordinate layout and support provisions for interfacing work.

Review field quality control procedures.

* + - * 1. Mockups: Build mockups to verify selections made and to demonstrate aesthetic effects and to set quality standards for fabrication and installation.

Build mockups for cladding [and soffit] including accessories:

Size: 72 square feet, unless noted otherwise.

Include outside corner on one end of mockup and inside corner on opposite end.

Construct a [portion of one exterior wall in location agreed upon by Consultant] [a free-standing mock-up] to establish a standard of construction, workmanship, and appearance.

Construct mock-up indicating relationship between wall cladding, air spaces, air/vapor retarder membrane, windows, and doors.

Do not continue with work of this Section until [Construction Manager,] [Owner,] [Consultant], [Architect,] [Engineer] has approved mock-up.

[Remove freestanding mock-up upon completion of all metal cladding work or when otherwise directed by Consultant.]

[Accepted mock-ups may be incorporated into the work of this Section.]

Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

* + - * 1. Meet non combustibility
      1. SCHEDULE
         1. If on-site measurements cannot be guaranteed, additional time must be provided to confirm the needed measurements. Doors and windows, as well as all other relevant elements, must be installed to guarantee on-site measurements.
      2. DELIVERY, STORAGE, AND HANDLING
         1. Materials and equipment must be transported, stored and handled according to the relevant extract in section [01 61 00].
         2. Deliver materials and components in manufacturer’s unopened boxes or pallets, properly labeled, and fully identified by product name and brand. Prevent any damage during unloading, storing, and installation.
         3. Store, protect and handle materials and components in accordance with manufacturer’s recommendations to prevent twisting, bending, mechanical damage, contamination, and deterioration.
         4. Store materials and components off ground and keep clean, dry, and free of dirt and debris. Store away from areas with failing objects or other construction activity that may occur or cause damage.
         5. Store materials to ensure dryness, with positive slope for drainage of water. Do not store materials and components in contact with other materials that might cause staining, denting, or other surface damage.
      3. SITE CONDITIONS
         1. Field Measurements: Verify location of structural members and openings in substrates by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the installation.
         2. Undertake installation work only when weather conditions meet manufacturers’ specific environmental requirements and when conditions will permit work to be performed in accordance with manufacturer recommendations and warranty requirements.
      4. WASTE MANAGEMENT AND DISPOSAL [EDIT AS REQUIRED]
         1. Separate waste materials for recycling in accordance with Section 01 74 21 “Waste Management and Disposal”.
         2. Divert used metal cutoffs from landfill by disposal [into the onsite metals recycling bin] [removed for disposal at the nearest metal recycling facility].
         3. Divert reusable materials for reuse at nearest used building materials facility.
         4. Divert unused caulking, sealants, and adhesive materials from landfill through disposal at hazardous material depot.
      5. WARRANTY [EDIT AS REQUIRED]
         1. Substrate warranty: 5 years against material and manufacturing defects, as well as for mechanical stability and stability and flatness.
         2. Finish Coating Warranty:

[Powder coated 2605 solid color finish]: XX-year warranty from date of substantial completion. Subject to maintenance of material and finish as recommended by the manufacturer. The finish is warranted to have the following properties:

Resistance to Cracking and Crazing.

Resistance to Chalking: The finish will not chalk more than a numerical rating of 8.

Color stability: No change in the color of the finish exceeding 5 (five) CIE Lab units. CIE illuminant D65.

Gloss Retention: Finish will retain at least 50% of the initial gloss,

Adhesion: The finish will not peel at a rate inferior to class 4B according to ASTM D3359.

See Manufacturer Warranty Sheet for full product and finish warranty details

[Powder coated 2604 solid color finish] : XX-year warranty from date of substantial completion. Subject to maintenance of material and finish as recommended by the manufacturer. The finish is warranted to have the following propertie:

Resistance to Cracking and Crazing.

Resistance to Chalking: The finish will not chalk more than a numerical rating of 8.

Color stability: No change in the color of the finish exceeding 5 (five) CIE Lab units. CIE illuminant D65.

Gloss Retention: Finish will retain at least 30% of the initial gloss,

Adhesion: The finish will not peel at a rate inferior to class 4B according to ASTM D3359.

See Manufacturer Warranty Sheet for full product and finish warranty details.

Contractor’s Labor Warrantees: three-year labor warranty, starting Substantial Performance, to cover repair of materials found to be defective.

1. PRODUCTS
   * + 1. MANUFACTURER
          1. Maibec Inc., 984 5e Rue #202, Levis, Quebec Canada G6W 5M6. [www.MAIBEC.com](http://www.MAIBEC.com)
       2. ALUMINUM PLATE PANEL WITH PETRIMETER EXTRUSION
          1. General: Provide as recommended by cladding manufacturer for building configuration. All panels must be folded at the factory. On site manufacturing or modification is not allowed.

Aluminum Alloy 5052-H32

Minimum metal thickness : 3mm (0,125”)

* + - * 1. Aluminum panel finishes must be exempt of any lead, heavy metals and TGIC, must not emit any solvents into the air during factory application, and must be both recyclable and reusable to be applied again in the factory.
        2. Panels and their components must be designed conforming to all r equirements stated in the National Building Code of Canada (CNB-2020), the CSA-S157 standard, and all codes in effect where the project is located.
        3. Maximum deflection

Maximum deflections under working loads, measured at the center of a panel, must be limited to L/60.

Maximum deflections under working loads for perimeter elements and extrusions must be limited to L/180.

* + - * 1. Manufacturing tolerances

Extrusion positioning tolerances are limited to ±1.6 mm (±0.063").

Facade panel dimension tolerances are limited to ±0.79 mm (0.0313”).

Maximum perpendicular tolerance for extrusions must not exceed 0.5°.

* + - * 1. Substitutions: Not Permitted.
        2. Requests for substitutions will be considered in accordance with the guidelines outlined in Section   
           01 60 00 “Product requirements
      1. DESIGN REQUIREMENTS
         1. Wall cladding systems must meet the following:

Siding solutions must be compatible with drained and back ventilated rainscreen system. Siding solutions must be mounted on a strong and rigid substrate, which will be able to withstand all applicable loads. Siding solutions must consist of the following:

Water resistant barrier applied under the wall cladding system, installed according to both the supplier's specifications and good practices.

Build-outs created by steel or aluminum sub girts, which redistribute charges to the substrate upon which the cladding, are installed.

Pre-painted aluminum or galvanized steel flashings imperatively designed to direct water to the outside of the assembly.

Aluminum or extruded aluminum panel assembly and hardware meeting the criteria described above.

* + - 1. ACCESSORIES [EDIT AS REQUIRED]
         1. General: Provide as recommended by siding manufacturer for building configuration.
         2. Accessories shall be made from the same material and matching finish of adjacent siding planks unless otherwise indicated.
         3. Screw covers. One piece aluminum.

Length to match panel perimeter:

Minimum metal thickness: 2mm

Width:

[3/4 inc]

[1 inch]

[1-1/4 inch]

[1-1/2 inch]

* + - 1. FINISHES [EDIT AS REQUIRED]

SPECIFIER NOTE: Select the desired finish specific to project and delete the other indicated finish. Where more than one finish is selected coordinate with drawings for clarity. Select accordingly Select accordingly.

* + - * 1. [Solid Color Finish]

Powder-coat finish: AAMA 2605 compliant.

Color according to color reference XXXXXXX from [AkzoNobel] [Tiger] [IFS] [PPG]

* + - * 1. [Solid Color Finish]

Powder-coat finish: AAMA 2604 compliant.

Color according to color reference XXXXXXX from [AkzoNobel] [Tiger] [IFS] [PPG]

* + - * 1. [Solid Color Finish]

Liquid-coat finish: [AAMA 2605] [AAMA 2604] compliant.

Color according to color reference XXXXXXX from [PAINT MANUFACTURER].

* + - * 1. Flashing: Provide aluminum flashing complying with Section 07 62 00 "Sheet Metal Flashing and Trim" at sill, window and door heads and where indicated

1. EXECUTION
   * + 1. EXAMINATION
          1. Before proceeding with the installation, make sure that the substrate is true and in good enough condition for the work to be carried out in accordance with the Manufacturer’s recommendations.
          2. The principal contractor is responsible for providing an appropriate mounting substrate with a maximum tolerance of three (3) millimetres over three (3) metres [0.125” for 120”] for placement when measured against reference axis and level measurements. The provided substrate must also deviate less than three (3) non-cumulative millimetres [0.125”] over two adjacent faces.
          3. The principal contractor must be able to provide a substrate both robust and sturdy enough to secure the wall cladding system to so that it can withstand all calculated loads according to the code in force for the project.
          4. Begin installation only when the substrate’s condition, verticality, and straightness have been confirmed as appropriate.
       2. PREPARATION
          1. Clean substrates of projections and substances detrimental to application.
          2. Inspect product before installation and verify that there is no shipping damage. Ensure proper handling and storage of all material.
          3. Do not install any damaged or questionable product; repair or replace as required for smooth, consistent, and high-quality finished appearance.
       3. INSTALLATION
          1. Begin installation only when inspection requirements are met.
          2. Do not install defective, damaged or scratched items.
          3. Do not modify panels or their components. Should there be any discrepancies between shop drawings and conditions in the field, contact the Project Manager to review the situation.
          4. Install all materials according to the Manufacturer’s recommendations.
          5. Avoid contact with incompatible materials.

* + - 1. ADJUSTING AND CLEANING
         1. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.
         2. Periodically clean exposed surfaces of battens that are not protected by temporary covering to remove fingerprints and soil during construction period. Do not let soil accumulate until final cleaning.
         3. Use temporary protective coverings where needed and approved by manufacturer. Remove protective covering at the time of Substantial Completion.
         4. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

**END OF SECTION**

DISCLAIMER: This Specification has been written as an aid to the professionally qualified Specifier and Design Professional. The use of this Guide requires the sole professional judgment and expertise of the qualified Specifier and Design Professional to adapt the information to the specific needs for the Building Owner and the Project, to coordinate with their Construction Document Process, and to meet all the applicable building codes, regulations, and laws. MAIBEC INC. EXPRESSLY DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR THE PARTICULAR PURPOSE OF THIS PRODUCT FOR THE PROJECT.