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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 43

DIGITALLY PRINTED PANELS

1. GENERAL
   * + 1. SECTION INCLUDES [EDIT AS REQUIRED]
          1. 100% Aluminum Composite Panel (ALCP)
          2. Installation parts and accessories with solid color AAMA 2604 paint.
          3. Products and accessories including

[Starter rail]

[Starter screw cover]

[Double rail]

[Double screw cover]

* + - 1. RELATED SECTIONS
         1. Section 01 74 19 - Construction/Demolition Waste Management and Disposal
         2. Section 05 41 00 - Structural Metal Stud Framing
         3. Section 06 10 00 - Rough Carpentry
         4. Section 07 21 00 - Thermal Insulation
         5. Section 07 25 00 - Weather Barriers
         6. Section 07 62 00 - Sheet Metal Flashing and Trim
         7. Section 07 92 00 - Joint Sealants
      2. REFERENCES (The date of the standard is that in effect as of the date of receipt of bids for the project.)
         1. National Research Council of Canada (NRC)

National Building Code of Canada 2020 (NBC-2020)

* + - * 1. International Code Council (ICC)
        2. International Building Code 2021 (IBC-2021)
        3. 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 Superior Organic Coatings on Aluminum Extrusions and Panels

AAMA 509-14: Voluntary Test Method and Classification for Drained and Back Ventilated Rain Screen Wall Cladding Systems

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

ASTM E330/E330M-14: 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 Measuring 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 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, Wire, Profiles, and Tubes

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

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

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

Florida Product Approval No. FL 22530

* + - 1. PERFORMANCE REQUIREMENTS
         1. Wall cladding systems must meet the following requirements:

Compatibility with a drained and back-ventilated rain screen system.

Design the cladding to extend continuously over structural supports and ensure that attachment to the structural supports can withstand imposed loads in accordance with the authority having jurisdiction.

Use of water-resistant barriers, steel or aluminum substructures, pre-painted aluminum or galvanized steel flashings, and extruded aluminum panels with hardware in accordance with defined criteria.

* + - 1. SUBMITTALS [EDIT AS REQUIRED]
         1. ACTION SUBMITTAL DOCUMENT AND SAMPLE TO BE SUBMITTED: Submit required documents in accordance with the general conditions outlined in Section 01 33 00.

Product Data: For each type of product, include the following:

Technical data sheet

Installation Instructions and Standard drawing details

Aluminum material information

Shop drawings details

Submit drawings showing dimensions, cross-sections, fastening methods, and wall elevations, specifying materials, finishes, and necessary details.

Digital Style and Color Chart showing variation in the selected style and color.

* + - * 1. SAMPLES: Submit two (2) wall cladding samples, 300 mm × 300 mm, matching the proposed materials, colors, and finishes.
        2. INFORMATIONAL SUBMITTALS

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

**SPECIFIER NOTE:** When the project targets a sustainable rating system, retain the paragraph on sustainable design submittals and modify it to match the specific project requirements. Adjust according to the targeted rating system.

Sustainable Design Submittals:

Raw Material Sourcing: Disclosure and optimization of construction products indicating source and extraction.

**SPECIFIER NOTE:** Retain the “Florida Building Code Certificate” for projects in Florida or when FBC qualification is used as a standard for high-wind design areas.

[Florida Building Code Supplement: Documentation indicating that products comply with Florida Building Code requirements.]

Custom Warranty: For special finishes.

* + - * 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
         1. Coordinate requirements with Section 01 45 00 “Quality Control”.
         2. Test Reports: Certified test reports demonstrating compliance with specified performance characteristics and physical properties, including laboratory reports confirming compliance with specified tests and standards.
         3. Manufacturer Qualifications:

Manufacturers must demonstrate certification or pre-certification by their powder coating supplier for the application of their product.

Manufacturers must be capable of producing orders without outsourcing the shaping and coating processes, provided the orders comply with technical data sheet specifications and recommended standard dimensions and shapes.

* + - * 1. Installer Qualifications: Engage an experienced installer with at least five years of experience who has completed similar systems in terms of materials, design, and scope as those specified for the project, and who has a proven track record of successful performance.
        2. Pre-Installation Meeting:

Conduct meeting at Project Site [Insert location].

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

Examine wall framing for potential interferences and conflicts, coordinate layout and support provisions for interfacing work.

Review support conditions to verify compliance with requirements, including alignment between fasteners and structural elements.

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 mockup of typical batten assembly shown on Drawings including supports, attachments, and accessories

Include an exterior corner at one end of the mock-up and an interior corner at the other end.

**SPECIFIER NOTE:** Retain the “Florida State Building Code Certificate” for projects in Florida or when FSBC qualification is used as a standard. The Florida product approval number listed is specific to MAIBEC.

* + - * 1. Florida Building Code Compliance: Provide cladding that complies with product and installation requirements of the Florida Building Code for locations outside the High-Velocity Hurricane Zone (HVHZ).
        2. Surface Burning Characteristics: Class A, In accordance with ASTM E84

Flame Spread Index (FSI): 20

Smoke Developed Index (SDI): 120

* + - * 1. UV Fade Test: In accordance with ASTM G155

No visible change to the naked eye after 2000 hours

* + - 1. SCHEDULE
         1. If on-site measurements cannot be guaranteed, additional time must be allowed to confirm the necessary dimensions. Doors, windows, and all other relevant elements must be installed in a way that ensures accurate on-site measurements.
      2. DELIVERY, STORAGE, AND HANDLING
         1. Materials and equipment must be transported, stored, and handled in accordance with the relevant excerpt from Section 01 61 00 “General Product Requirements”.
         2. Deliver materials and equipment to the job site in their original packaging, labeled with the manufacturer’s name and address. Prevent any damage during unloading.
         3. Store, protect, and handle materials and components according to the manufacturer’s recommendations to avoid warping, bending, mechanical damage, contamination, and deterioration.
         4. Store materials and equipment protected from the weather, in a clean, dry, and well-ventilated area, as recommended by the manufacturer.
         5. Store materials in a dry condition, with a positive slope for water drainage. Do not store materials and components in contact with other materials that could cause staining, dents, or other surface damage.
      3. SITE CONDITIONS
         1. On-site measurements must be confirmed once doors, windows, and other relevant elements are installed, with a maximum tolerance of three (3) millimeters over three (3) meters [0.125" per 120"] for alignment and verticality.
         2. Installation work must only begin when weather conditions meet the manufacturer’s specific environmental requirements and when conditions allow the work to be carried out in accordance with the manufacturer’s 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 scraps from landfill by disposing of them [in the on-site metal recycling container] [or removing them for disposal at the nearest metal recycling facility].
         3. Divert reusable materials for reuse at the nearest used building materials depot.
         4. Divert unused materials such as caulking, sealants, and adhesives from landfill by disposing of them at a hazardous materials depot.
      5. WARRANTY [EDIT AS REQUIRED]
         1. The manufacturer warrants that its aluminum cladding and soffits are free from material and manufacturing defects, and that once installed and maintained in accordance with the manufacturer’s instructions, the products are guaranteed against corrosion.
         2. Substrate warranty: 50 years against material and manufacturing defects, as well as for mechanical stability and flatness.
         3. Finish Warranty

[Digital printed Finish]: 20 years with a 5-year prorated period from the date of substantial completion. The finish is warranted to have the following properties:

Resistance to Cracking and Crazing.

Color stability: No color change exceeding ΔE 5 CIE Lab units.

Gloss Retention: Gloss retention of at least 50%

Adhesion: The finish will not peel below class 4B per ASTM D3359

efer to the manufacturer’s warranty sheet for full product and finish warranty details.

[Powder Coated Finish 2604]: Warranty of [X years] from the date of substantial completion, subject to maintenance of the material and finishes as recommended by the manufacturer. The finish is warranted to have the following properties:

Resistance to Cracking and Crazing.

Resistance to Chalking: No chalking on the building exceeding value 8 per ASTM D4214.

Color stability: No color change exceeding ΔE 5 CIE Lab units

Gloss retention of at least 30%.

Adhesion: The finish will not peel below class 4B per ASTM D3359.

Refer to the manufacturer’s warranty sheet for full product and finish warranty details..

Contractor’s Labor Warrantees: Three (3) years from the date of substantial completion, covering repair of defective materials.

1. PRODUCTS
   * + 1. MANUFACTURER
          1. Maibec Inc., 1984 5e Rue #202, Lévis, QC, Québec Canada G6W 5M6.  [www.MAIBEC.com](http://www.maibec.com/)
       2. MATERIAL
          1. 100% Aluminum Composite Panel (ALCP): Alloy AA3003H18 in accordance with ASTM B209
          2. Extruded Aluminum: Alloy 6063-T5 in accordance with ASTM B221
       3. PRINTED ALUMINUM COMPOSITE PANELS [AND SOFFIT] [EDIT AS REQUIRED]
          1. General: Provide panels recommended by the cladding manufacturer based on the building configuration. All panels must be factory-assembled. On-site fabrication or modification is not permitted.
          2. Aluminum panel finishes must be free of lead, heavy metals, and TGIC, must not emit solvents into the air during factory application, and must be both recyclable and reusable for reapplication in the factory.
          3. Panels and their components must be designed in accordance with all requirements set out in the National Building Code of Canada (NBC-2020), CSA-S157 standard, and all applicable codes in the region where the project is located.
          4. Manufacturing Tolerances:

xtrusion positioning tolerances: ±1.6 mm (±0.063")

Panel dimension tolerances: ±1.6 mm (±0.063")

Maximum perpendicular tolerance for extrusions: 0.5°

* + - * 1. Substitutions: Not permitted.
        2. Requests for substitutions will be reviewed in accordance with Section 01 60 00 “Product Requirements”.
      1. REQUIREMENTS
         1. Wall cladding systems must meet the following requirements: Cladding solutions must be compatible with drained and back-ventilated rain screen systems. The cladding system must be mounted on a solid and rigid support capable of withstanding all applicable loads. The cladding system must include the following elements:

A water-resistant barrier applied beneath the wall cladding system, implemented in accordance with the supplier’s specifications and best practices.

Openings created by steel or aluminum sub-girts that redistribute loads to the support on which the cladding is installed.

Pre-finished aluminum or galvanized steel flashings specifically designed to direct water outward from the assembly.

Assembly of aluminum or extruded aluminum panels and hardware meeting the criteria described above.

* + - 1. ACCESSORIES [EDIT AS REQUIRED]
         1. General: Provide materials recommended by the cladding manufacturer for the building configuration.
         2. Extruded Aluminum Accessories:

Starter Rail:

Metal thickness: 0.08 inch (2 mm)

Finish: RAL 7022 – Umbra Grey

Gloss: 20° ±5

Starter Screw Cover:

Metal thickness: 0.05 inch (1.3 mm)

Finish: RAL 7022 – Umbra Grey

Gloss: 20° ±5

Double Rail:

Metal thickness: 0.08 inch (2 mm)

Finish: Raw Aluminum

Double Screw Cover:

Metal thickness: 0.06 inch (1.4 mm)

Finish: RAL 7022 – Umbra Grey

Gloss: 20° ±5

* + - * 1. Fasteners: Recommended by manufacturer. Do not use metals that are incompatible with joined materials.

Use types and sizes to suit unit installation conditions.

Use Stainless Steel screws or other types best suited to substrate conditions and environmental exposition. Size specified in technical data sheets, unless otherwise indicated.

Use Anchors and Inserts of type, size, and material required for loading and installation indicated.

Use nonferrous metal or hot dip galvanized anchors and inserts.

Use toothed steel or expansion bolt devices for drilled in place anchors.

* + - * 1. Use toothed or expansion bolt devices for site-drilled anchors.
        2. Flashings: Provide aluminum flashings in accordance with Section 07 62 00 “Sheet Metal Flashing and Trim” at sills, window and door heads, and where indicated.
      1. FINISHES [EDIT AS REQUIRED]
         1. [Digitally Printed Three-layer Finish]

Primer coat: High quality white UV coating applied to aluminum.

Digital printed inkjet coating.

UV Barrier: Protective Clear Coat for UV protection against fading.

Style and Color to match MAIBEC Architectural Aluminum [STYLE and Color reference XXX-XX].

* + - * 1. [Solid Color Finish]

Powder-coated finish: AAMA 2604 certified

Color to match Umbra Grey RAL 7022 matte finish.

1. EXECUTION
   * + 1. INSPECTION
          1. Before starting installation, ensure 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 general contractor must provide a suitable mounting substrate with a maximum tolerance of three (3) millimeters over three (3) meters [0.125" per 120"] for alignment, measured from the reference axis and level measurements. The substrate must also have a deviation of less than three (3) millimeters [0.125"] non-cumulative on two adjacent faces.
          3. The general contractor must provide a substrate that is both robust and strong enough to secure the wall cladding system and support all loads calculated according to the applicable building code.
          4. Begin installation only once the condition, verticality, and straightness of the substrate have been properly confirmed.
       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 conditions are met.
          2. Do not install defective, damaged, or scratched components.
          3. Do not modify panels or their components. In case of discrepancies between shop drawings and site conditions, contact the project manager to review the situation.
          4. Install all materials in accordance with the manufacturer’s recommendations.
          5. Avoid contact with incompatible materials.
       4. ADJUSTING AND CLEANING
          1. Remove damaged, poorly installed, or otherwise defective materials and replace them with new materials that meet specified requirements.
          2. Periodically clean exposed surfaces not protected by temporary covering to remove fingerprints and dirt during construction. Do not allow dirt to accumulate until final cleaning.
          3. Protect surfaces from damage during construction. Use temporary protective coverings as needed. Remove protective coverings at substantial completion.
          4. Clean and touch up minor finish scratches with air-dried coating that matches the color and gloss and is compatible with the factory-applied finish.
          5. Clean finished surfaces according to the manufacturer’s written instructions and keep them in good condition during construction. Before final inspection, clean exposed surfaces with water and a mild soap or detergent that will not harm the finish. Rinse thoroughly 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.