

## PART 1 - GENERAL

## 1.1 SUMMARY

## A. Section Includes:

1. MCM interior wall or ceiling paneling.

## B. Related Sections:

1. Section 074213.23 "Metal Composite Material Wall Panels" for exterior metal-faced composite wall panels.

## 1.2 DEFINITIONS

- A. MCM: Metal composite material; cladding material formed by joining two thin metal skins to polyethylene or fire-retardant core and bonded under precise temperature, pressure, and tension.

## 1.3 COORDINATION

- A. Coordinate layout and installation of metal interior wall paneling with adjacent construction.

## 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **[Project site]** <Insert location>.

## 1.5 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.

## B. Sustainable Design Submittals:

## C. Sustainability Submittals:

## D. Shop Drawings:

1. Include fabrication and installation layouts of MCM panels; 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).

- E. Samples for Initial Selection: For each type of MCM panel indicated with factory-applied finishes.
  - 1. Include Samples of trim and accessories involving color selection.
- F. Samples for Verification: For each type of exposed finish, prepared on Samples of size indicated below:
  - 1. MCM Panels: 12 inches (305 mm) long by actual panel width. Include fasteners, closures, and other MCM panel accessories. Submit custom color samples in paint manufacturer's standard size.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For MCM panels to include in maintenance manuals.

#### 1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Extra Stock Material: Furnish extra materials[, **from the same production run,**] to Owner that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Metal Interior Wall Paneling Components: Quantity of each metal wall panel unit and accessory equal to [2] <Insert number> percent of quantity installed.

#### 1.9 MOCKUPS

- A. When necessary, 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 MCM panel assembly [**as shown on Drawings**] <Insert size>, including [**corner,**] [**soffits,**] 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, MCM panels, and other manufactured items to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they are protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes. Package MCM panels for protection during transportation and handling.
- B. Unload, store, and erect MCM panels, components, and accessories in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack MCM panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store MCM panels to ensure dryness, with positive slope for drainage of water. Do not store MCM panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Retain strippable protective covering on MCM panels during installation.

**1.11 FIELD CONDITIONS**

- A. Environmental Limitations: Do not install metal interior wall paneling until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

**1.12 WARRANTY**

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace MCM panels that fail in materials 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: [**ten**] years from date of Substantial Completion.
- B. Special Warranty: Installer's workmanship warranty in which fabricator and/or installer agrees to repair or replace MCM panels that fail in materials 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.
- C. Warranty Period: [**two**] years from date of Substantial Completion

- D. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace MCM 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 Delta E units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: [20] [10] <Insert number> years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

- A. Obtain components and materials specified in this Section from manufacturers with third party quality inspection programs.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Metal interior wall paneling to withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of components, noise, or metal fatigue caused by rattle or flutter, or permanent damage to fasteners and anchors.
- B. Surface-Burning Characteristics: For metal interior wall paneling, determined by testing in accordance with ASTM E84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame-Spread Index: [25] <Insert value> or less.
  2. Smoke-Developed Index: [100] <Insert value> or less.
- C. Seismic Performance: As indicated on Drawings.
- D. Seismic Performance: Metal interior wall paneling, including attachments to other construction, to withstand the effects of earthquake motions determined in accordance with [ASCE/SEI 7] <Insert requirement>.
1. Design earthquake spectral response acceleration, short period (Sds) for Project is <Insert value>.
  2. Component Importance Factor: [1.5] [1.0].

### 2.3 METAL INTERIOR WALL PANELING

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **3A Composites USA Inc.; ALUCOBOND PLUS** or comparable product by one of the following:

1. Arconic Architectural Products (USA).
  1. Mitsubishi Chemical Composites.
  2. <Insert manufacturer's name>.
- B. Wall Panels <Insert drawing designation>: Formed with 0.020-inch- (0.50-mm-) thick, [coil-coated] [anodized] aluminum sheet facings with manufacturer's standard fire-retardant core.
1. Panel Thickness: [0.157 inch (4 mm)] [As indicated on Drawings].
  2. Finish: [PVDF fluoropolymer] [FEVE fluoropolymer] [Siliconized polyester] [Anodized] with coats and thicknesses that comply with MCM panel manufacturer's performance and warranty requirements.
    - a. Color: [As indicated by manufacturer's designations] [As selected by Architect from manufacturer's full range] [As indicated on drawing schedule].
      - 1) Color 1: <Insert color>.
      - 2) Color 2: <Insert color>.
      - 3) Color 3: <Insert color>.
      - 4) Color 4: <Insert color>.
  3. Peel Strength: 22.5 in-lb/in. (100 N x mm/mm) when tested for bond integrity in accordance with ASTM D1781.

## 2.4 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Sub-framing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A792/A792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide MCM panel manufacturer's standard sections as required for support and alignment of metal interior wall paneling.
- B. Joint Sealer, Interior: Non-sag, paintable, non-staining, latex sealant complying with ASTM C834; of type and grade required to seal joints in decorative formed metal; as recommended in writing by decorative formed metal manufacturer and with a VOC content of not more than 250 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).AA. Joint Sealer: Clear silicone sealant approved by MCM sheet manufacturer.
- C. Panel Accessories: Provide components required for a complete metal interior wall panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items to provide finished appearance. Match material and finish of MCM panels unless otherwise indicated.
1. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by MCM panel manufacturer.
  2. Provide aluminum flashing such as ALUCOBOND AXCENT for closure conditions.
- D. Fasteners: Manufacturer's standard. Use types and sizes to suit unit installation conditions.

1. Use [**Phillips flat-head**] [**hex-head or Phillips pan-head**] [**tamper-resistant**] screws for exposed fasteners unless otherwise indicated.
2. For fastening aluminum, use aluminum fasteners or 300 series stainless steel fasteners.
3. For fastening galvanized steel, use hot-dip-galvanized-steel fasteners or 300 series stainless steel fasteners.
4. For exposed fasteners within color-finished metal interior wall paneling, use fasteners with heads that match color of panels.

## 2.5 FABRICATION

- A. Fabricate and finish MCM panels and accessories at the factory, by MCM panel manufacturer's standard procedures and processes, as necessary to meet specified performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
- B. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with MCM panel manufacturer's written instructions that apply to design, dimensions, metal, and other characteristics of item indicated.
  1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
  2. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
  3. Conceal fasteners where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
  4. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by MCM panel manufacturer.
    - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or MCM wall panel manufacturer for application but not less than thickness of metal being secured.

## 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. MCM Wall Panels:
  1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF resin by weight in color coat. Prepare,

- pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions[ **for seacoast and severe environments**].
2. Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions[ **for seacoast and severe environments**].
  3. Mica Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions[ **for seacoast and severe environments**].
  4. Metallic Fluoropolymer: AAMA 2605. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions[ **for seacoast and severe environments**].
  5. FEVE Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether (FEVE) resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions[ **for seacoast and severe environments**].
  6. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
  7. Exposed Anodized Finish:
    - a. Clear Anodic Finish: AAMA 611, [AA-M12C22A41, Class I, 0.018 mm] [AA-M12C22A31, Class II, 0.010 mm] or thicker.
    - b. Color Anodic Finish: AAMA 611, [AA-M12C22A42/A44, Class I, 0.018 mm] [AA-M12C22A32/A34, Class II, 0.010 mm] or thicker.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, MCM panel supports, and other conditions affecting performance of the Work.
- B. Examine roughing-in for components and systems penetrating MCM panels to verify actual locations of penetrations relative to seam locations of MCM panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Miscellaneous Supports: Install sub-framing, furring, and other miscellaneous panel support members and anchorages in accordance with MCM panel manufacturer's written instructions and approved Shop Drawings.

### 3.3 INSTALLATION

- A. Install metal interior wall paneling in accordance with approved Shop drawings and manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor MCM panels and other components of the Work securely in place.
  - 1. Shim or otherwise plumb substrates receiving MCM panels.
  - 2. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
  - 3. Align bottoms of MCM panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
- B. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by MCM panel manufacturer.
- C. Accessory Installation: Install accessories with positive anchorage to building as required for a complete MCM panel system; including trim, copings, corners, seam covers, flashings, fillers, closure strips, and similar items to provide finished appearance. Coordinate installation with flashings and other components.
- D. Flashing and Trim: Comply with performance requirements and MCM panel manufacturer's written installation instructions. Provide concealed fasteners where possible, and set units true to line and level as indicated.
  - 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 achieve specified performance.
- E. Installer Qualifications: Company specializing in performing work of the type specified in this section.
  - 1. With minimum **<<3 years; or \_\_\_\_>>** of**<< documented; or None - N/A>>** experience.
  - 2. Submit contact names and phone numbers for at least **<<three; or \_\_\_\_>>** references connected with successful past projects.

### 3.4 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as MCM panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On

completion of MCM panel installation, clean finished surfaces as recommended in writing by MCM panel manufacturer. Maintain in a clean condition during construction.

- B. Remove and replace components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage, including dented and bent units.

END OF SECTION 097813