

PART 1 – GENERAL

1.1 SECTION INCLUDES

1. Exterior Metal Plate Wall Panels
2. Substrate and Framing
3. Structural Attachments
4. Accessories
5. Factory Applied Finishes

1.2 RELATED SECTIONS

1. Section 05 1200 – “Structural Steel” for supporting substrate
2. Section 05 4000 – Cold-Formed Metal Framing: Wall panel substrates support framing
3. Section 06 1000 – Rough Carpentry: Plywood substrate wall sheathing
4. Section 07 2500 – Weather Barriers: Air and moisture barrier required as part of metal wall panel assembly
5. Section 07 6200 – Sheet Metal Flashing and Trim: Field formed flashings and other sheet metal work
6. Section 07 9005 – Joint Sealers: Perimeter sealant

1.3 REFERENCES

1. AAMA CW-RS-1 – The Rainscreen Principle and Pressure Equalized Wall Design
2. AAMA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for Superior Organic Coatings on Aluminum Extrusions and Panels; 2011 (Testing based on 2005 Edition)
3. AAMA TIR-A9-2000: Metal Curtain Wall Fasteners
4. ASTM A-500: Standard for Carbon Steel Structural Square and Rectangular Steel Tubes
5. ASTM B-209: Standard for Aluminum Sheet and Plate
6. ASTM C-754 – Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
7. ASTM E-330 – Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2010

1.4 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. Shop Drawings:
 1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, accessories, and special details.
 2. Accessories: Include details of the flashing trim, and anchorage systems
- C. Samples for Verification: Provide minimum 24-inch section of wall panel showing horizontal joinery, vertical joint return, profile stiffener and anchoring details. Provide 12-inch long pieces of

aluminum trim.

- D. Samples for Color Verification: For each type of exposed finish, submit color samples for each finish.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer
- B. Product Test Reports: For each product, for tests performed by a qualified testing agency
- C. Field Quality-Controlled Reports
- D. Sample Warranties: Product warranty

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: for metal panels to include in maintenance manuals

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Any entity that employs installers and supervisors who are trained and approved by the manufacturer.
 - 1. Installer shall have at least 10 years of documented experience in installation of metal wall panels similar to that required for this project and whose installations have a record of successful in-service performance.

1.8 COORDINATION

- A. Coordinate metal panel installation with rain drainage work, flashing trim, construction of soffits, and other adjoining work.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal 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 metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials and workmanship within the specific 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 metal panels that show evidence of deterioration of factory-applied finishes within the specified warranty period.
- 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter 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 years from date of Substantial Completion

PART 2 – PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Modular metal wall panel system consisting of formed aluminum panels installed in a rainscreen application, with interlocking capabilities.

2.2 MANUFACTURERS

- A. Modular Metal Wall Panel System: Subject to compliance with requirements provide:
 - 1. Basis of Design: ACMpanelworx PX-5 Single Skin Modular Metal Wall Panel System; www.acmpanelworx.com
 - a. Or approved equal to comply with the design requirements of drawings and specifications

2.3 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:
 - 1. Wind Loads: As indicated on Drawings
 - 2. Other Design Loads: As indicated on Drawings
 - 3. Deflection Limits: For wind loads, no greater than 1/180 of the span

2.4 MODULAR METAL PANELS

- A. Modular Metal Panels: Factory-formed, aluminum single skin panels, with integrated 1" unobstructed reveal both vertically and horizontally.

2.5 MATERIAL

- A. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance as required; tension-leveled.
 - 1. Nominal Thickness: 0.080 inch, minimum.
 - 2. Surface: Smooth, flat finish.

- B. Panel Sizes: as indicated on Drawings and as follows:
 - 1. Panel Depths: 1 inch.
 - 2. Panel Reveal Joints: ½ or ⅝ inch.
- C. Metal Trim and Flashings: Provide flashing and trim as required to manage weather and to provide finished appearance
 - 1. Aluminum Sheet: Smooth surface coil-coated sheet, ASTM B209, alloy as standard with manufacturer, with temper as required to suit forming operations.
 - a. Nominal Thickness: 0.040 inch, minimum.
 - b. Surface: Smooth, flat finish.
 - 2. Exposed Trim, Flashings and Fastener Finish: Match panel finish unless otherwise noted.
 - 3. Accessories: Provide manufacturer's extruded clips, shims, flashings, sealants, and tapes for a complete installation.

2.6 FINISHES

- A. Aluminum Finishes:
 - 1. High Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
 - a. Color and Gloss: As selected by Architect from manufacturer's full range.
 - b. Paint Applicator: Must be a PPG Factory Applied High Performance Architectural Metal Coatings Certified Applicator and Quality Audited by PPG. For PPG Certified Applicators, go to: www.ppgideascape.com/Metal-Coatings/Where-To-Buy/Approved-Extrusion.aspx

2.7 FABRICATION

- A. General: Fabricate modular metal panel system from components of sizes not less than those indicated and as recommended by manufacturer. Furnish all fasteners, hardware and accessories required for a complete installation.
- B. Fabricate in accordance with approved shop drawings.
- C. Fabricate system complete to satisfy structural and performance requirements.
- D. Cut, Drill, Punch, and Form metals cleanly and accurately. Remove burrs and ease edges of radius to the material thickness of the given material, unless indicated otherwise. Remove sharp or rough edges on exposed surfaces.

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. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances as required by metal wall panel manufacturer.
2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances as required by metal wall panel manufacturer.
 - a. Verify that air or water resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine rough-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 METAL PANEL INSTALLATION

- A. General: Install modular metal panels according to manufacturer`s written instructions in orientation, sizes, and locations indicated. Anchor metal panels and other components of the work securely in place, with provisions for thermal and structural movement.
 1. Shim or otherwise plum substrates receiving metal panels.
 2. Flash metal panels at perimeter of all openings.
 3. Locate and space fastenings in uniform vertical and horizontal alignment.
 4. Install flashing and trim as metal panel work proceeds.
- B. Fasteners: Use stainless steel fasteners only
- C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by the metal panel manufacturer.
- D. Flashings 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 as indicated. Install work with laps, joints, and seams that are permanently water tight.
 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 waterproof performance.
 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.

3.3 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer`s written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
- B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by

finish touch-up or similar minor repair procedures.

****END OF SECTION****