

## **WET SEAL WALL PANEL SYSTEM**

### **SECTION 07400 METAL PLATE WALL PANELS**

#### **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. Fluoropolymer finished aluminum metal wet joint plate wall assembly: Metal plate wall panels, and accessory copings, attachment system components, miscellaneous metal framing, and accessories necessary for a complete weather tight wall system.
- B. Related requirements
  - 1. Section 054000 "Cold-Formed Metal Framing".
  - 2. Section 061600 "Sheathing".
  - 3. Section 072100 "Thermal Insulation".
  - 4. Section 072726 "Fluid-Applied Membrane Air Barriers".
  - 5. Section 076200 "Sheet Metal Flashing and Trim".
  - 6. Section 079200 "Joint Sealants" for perimeter sealant.

##### **1.3 REFERENCE STANDARDS**

- A. AAMA - American Architectural Manufacturers Association ([www.aamanet.org](http://www.aamanet.org)).
  - 1. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2011 (Testing based on 2005 Edition).
- B. NAAMM – National Association of Architectural Metal Manufacturers.
- C. SMACNA – Sheet Metal and Air Conditioning Contractor's National Association.

##### **1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination: Coordinate panel assemblies with rain drainage, flashing, trim, stud back-up, soffits, and other adjoining work.
- B. Pre-installation Conference:
  - 1. Meet with Owner, Architect, and metal plate wall panel Installer, metal plate wall panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects panels 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 metal plate wall panel 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 will affect metal plate wall panels.
  - 6. Review temporary protection requirements for metal plate wall panel assembly during and after installation.

##### **1.5 SUBMITTALS**

- A. Product Data: Submit for each type of product indicated, include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal plate wall panel and accessory.
- B. Coordination Drawings: Submit exterior elevations, drawn to scale, that have the following items shown and coordinated with each other, using input from installers of these items as follows:
  - 1. Metal plate wall panels and attachments.
  - 2. Girts.
  - 3. Wall-mounted items including doors, windows, louvers, and lighting fixtures.
  - 4. Penetrations of wall by pipes and utilities.

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- C. Samples: Submit for each type of exposed finish required, and prepared on samples of size as follows:
  - 1. Aluminum Metal Plate Wall Panels: At least 6 inch by 6 inch.
- D. Test and Inspection Reports: Submit test and inspection reports on each type of wall panel system provided for project based on evaluation of comprehensive tests performed by qualified testing agency.
- E. Maintenance Data: Submit maintenance data for metal plate wall panels.
- F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

#### **1.6 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with at least ten years of documented experience.
- B. Installer: Company specializing in performing work of this section and approved by manufacturer.
  - 1. Install system in strict compliance with manufacturer's installation instructions.
- C. Source Limitations: Obtain each type of metal plate wall panel from single source and from single manufacturer.

#### **1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage and Handling: Store materials in clean, dry, interior area in accordance with manufacturer's instructions.
- C. Deliver panels, components, and other manufactured items without damage or deformation.
- D. Protect panels during transportation, handling, and installation from weather, excessive temperatures and construction operations.
- E. Handle panels in strict compliance with manufacturer's instructions and recommendations, and in a manner to prevent bending, warping, twisting, and surface damage.
  - 1. Store panels vertically with top of panel down, storage of panels horizontally is not permitted.
- F. Store panels covered with suitable weather tight and ventilated covering.
- G. Provide storage of panels to ensure dryness, with positive slope for drainage of moisture.
- H. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.
- I. Remove strippable protective covering from panel prior to installation.

#### **1.8 COORDINATION**

- A. Coordinate metal plate wall panel assemblies with rain drainage work, flashing, trim, and construction of studs, soffits, and other adjoining work.

## 1.9 WARRANTY

- A. Wall System Warranty: Provide wall panel manufacturer warranty, agreeing to correct defects in manufacturing of materials within a one year period after date of Substantial Completion.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures, including rupturing, cracking, or puncturing.
    - b. Deterioration: Beyond normal weathering of wall system metals and other materials.
- B. Panel Finish Warranty: Provide panel finish manufacturer warranty, agreeing to repair finish of metal plate wall panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Finish Warranty Period: 10 years from date the substantial completion.
  - 2. Warranty Coverage: In accordance with AAMA 2605 for 70 percent PVDF resin on aluminum finish requirements.
    - a. Fading, Loss of Color Retention: Loss of 5 Delta E units (Hunter) or less in accordance with ASTM D 2244.
    - b. Chalking, Chalky White Powder on Panel Surface: Chalking at No. 8 or less for colors or No. 6 for white in accordance with ASTM D 4214.
    - c. Loss of Adhesion: Loss of 10 percent due to cracking, checking or peeling, or failure to adhere to bare metal.
    - d. Gloss Retention: 50 percent or less in accordance with ASTM D 523.
    - e. Salt Spray, Accelerated: At least 4,000 hours in accordance with ASTM B 117.
    - f. Humidity Testing, Accelerated: At least 4,000 hours in accordance with ASTM D 2247.

## PART 2 - PRODUCTS

### 2.1 SYSTEM

- A. Aluminum Plate Wall Panel Barrier System.

### 2.2 MATERIALS

- A. Aluminum Plate: Alloy and temper as recommended by manufacturer for application and in compliance with manufacturers design requirements.
  - 1. Aluminum Material: Tension-levleed, fluoropolymer PVDF finish
  - 2. Fluoropolymer PVDF painted finish, 5052- H32 or 3003-H14 manganese alloy.
  - 3. Choose: [.090] [.120] [.1875] [.250].
- B. Panel Fasteners: Suitable fasteners designed to withstand design loads. Stainless steel fastener with a minimum 7/16" diameter head and neoprene washer.
- C. Panel Depth: 1 1/2 inch- 1 3/4 inch, nominal.
- D. Panel Size: per drawings.
- E. Panel Joints: per drawings.
- F. Composite material will not be permitted.

### 2.3 FABRICATION

- A. Fabricate and finish wall panels within manufacturer's facilities and fulfill indicated performance requirements demonstrated by laboratory testing.
  - 1. Comply with indicated profiles and with dimensional and structural requirements.
- B. Panels to be painted after fabrication to eliminate exposed raw edges.
- C. Intermediate Panel Stiffeners: Provide as required by design loads applied to panels, and secure to rear face of panel with silicone based adhesive and size and strength to maintain panel flatness.
- D. Fully mitered and welded corners ground smooth for seamless appearance prior to finishing.

### 2.4 FINISHES

- A. Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.
- B. Superior Performance Organic Coating System: AAMA 2605 multiple coat, thermally cured polyvinylidene fluoride (PVDF) resin system.
  - 1. Two-Coat Fluoropolymer: AAMA 2605, fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' installation instructions.
  - 2. Three-Coat Fluoropolymer: AAMA 2605, fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' installation instructions.

- C. Field Touch-Up Materials: As recommended by coating manufacturer for field application.

## 2.5 ACCESSORIES

- A. Metal Plate Wall Panel Accessories: Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
- B. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
- C. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
  - 1. Thickness: At least 0.040 inch.
  - 2. Refer to Section 076200 for additional requirements.
- D. Panel Fasteners: Designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
  - 1. Aluminum Wall Panel Material: Stainless steel fasteners.
- E. Sub-Girts: Galvanized, provide size and gage in accordance with project requirements.
  - 1. Furring Channel: Provides hat type. 2 inch to accommodate insulation thickness.
  - 2. At least 14 -16 gauge thick, as required.
- F. Substrate Wall Sheathing:
  - 1. Refer to Drawings and Section 061600 for requirements.
- G. Weather Barriers:
  - 1. Refer to Section 072500 for requirements. Refer to Specifications for requirements.
- H. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.

## PART 3 - EXECUTION

### 2.6 EXAMINATION

- A. Examine substrates, and Work areas and conditions with Installer present for compliance with requirements for installation tolerances, wall panel supports, and other conditions affecting performance of this Work.
- B. Examine wall framing to verify that girts, angles, channels, studs, and other structural wall panel support members and anchorage have been installed within alignment tolerances required by wall panel manufacturer.
- C. Verify that weather barrier has been installed over sheathing or substrate to prevent air infiltration or water penetration.
- D. Examine rough-in for components and systems penetrating wall panels to coordinate actual penetration locations relative to wall panel joint locations prior to installation.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

### 2.7 PREPARATION

- A. Miscellaneous Framing: Install sub girt, base angles, sills, furring, and other wall panel support members and provide anchorage in accordance with ASTM C 754 for gypsum panel type substrates and panel manufacturer's installation instructions.

### 2.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal plate wall panels to be performed according to manufacturer's written instructions and warranty requirements.
- B. Field Measurements: Verify locations of structural members and wall opening dimensions by field measurements before metal plate wall panel fabrication and indicate measurements on Shop Drawings.

## 2.9 INSTALLATION

- A. Install wall panels in accordance with manufacturer's installation instructions, including barrier system installation method and installation guidelines.
  - 1. Attach wall panels using progressive flange and slot interlocking method, engaging bottom of panel in top of previous panel working bottom up, and left to right.
  - 2. Install wall panels with single top attachment in pre-punched holes to allow individual panels to move due to thermal expansion.
- B. Install wall panels for orientation, sizes, and locations as indicated on Drawings.
- C. Install wall panels with proper anchorage and other components for this Work securely in place.
- D. Install wall panels with provisions for thermal and structural movement.
- E. Install shims to plumb substrates as necessary for installation of wall panels.
- F. Install weather tight seals at perimeter of wall panel openings.
  - 1. Test for proper adhesion on small unexposed area of solid surfacing prior to use.
- G. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA - Architectural Sheet Metal Manual.
  - 1. Provide concealed fasteners where possible, and set units true to line and level as indicated.
  - 2. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
  - 3. Install flashing and trim as wall panel Work proceeds.
- H. Install weather tight escutcheons for pipe and conduit penetrating exterior walls.
- I. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action as recommended by wall panel manufacturer.
- J. Install attachment system to support wall panels and with provisions to provide a complete weather tight wall system, including sub girts, extrusions, flashings and trim.
  - 1. Include attachment to supports and trims at locations using dissimilar materials.
  - 2. Do not apply sealants to joints, unless noted otherwise on Drawings or Shop Drawings.
  - 3. Install starter extrusion at base course and at cut panel locations.
- K. Install accessories with positive anchorage to building and weather tight mounting and provisions for thermal expansion, and coordinate installation with flashings and other components.
  - 1. Install components required for a complete wall panel assembly including trim, copings, flashings and other accessory items.
- L. Air/Weather Barrier: Install air/weather barrier behind wall panels and over substrate in accordance with requirements of Section 072500.
- M. Install insulation between Z-clips in accordance with Section 072100.

## 3.1 TOLERANCES

- A. Shim and align wall panel units with installed tolerances of 1/4 inch in 20 feet, non-cumulative, on level, plumb, and location lines as indicated.

## 3.2 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified independent testing agency to perform field tests and inspections.
- B. Water-Spray Test: After installation and in coordination with Mockup requirements, test area of assembly as directed by Architect for water penetration in accordance with AAMA 501.2.
- C. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect completed metal wall panel installation, including accessories.
- D. Remove and replace metal wall panels where tests and inspections indicate that they do not comply with specified requirements.
- E. Perform additional tests and inspections, at Contractor's expense, to verify compliance of replaced wall panels or necessary additional work with specified requirements.
- F. Prepare test and inspection reports.

## 3.3 CLEANING

- A. Upon completion of wall panel installation, clean finished surfaces as recommended by panel manufacturer.
- B. Upon completion of wall panel installation, clear weep holes and drainage channels of obstructions and

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**3.4 PROTECTION**

- A. Protect installed products from damage during subsequent construction.
- B. Replace wall panels damaged or deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

**END OF SECTION**