

SECTION 07 42 13.6
MODULAR METAL WALL PANELS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Concealed fastener, coil coated, rainscreen wall panel as part of the wall assemblies described in Section 2.1.

1.2 RELATED REQUIREMENTS

- A. Division 01 Section "Sustainable Design Requirements" for related LEED 2009 general requirements.
- B. Division 07 air barrier section for transition and flashing components of building air/moisture barrier.
- C. Division 07 Section "Sheet Metal Flashing and Trim" for sheet metal copings, flashings, reglets and roof drainage items.
- D. Division 07 Section "Joint Sealants" for field-applied joint sealants.

1.3 REFERENCE STANDARDS

- A. American Architectural Manufacturer's Association (AAMA):
 - 1. AAMA 620 - Voluntary Specification High Performance Organic Coatings on Coil Coated Architectural Aluminum.
 - 2. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- B. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- C. ASTM International (ASTM):
 - 1. ASTM B 209 - Specification for Aluminum and Aluminum Alloy Sheet and Plate.
 - 2. ASTM B 221 - Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 3. ASTM D 3359 - Standard Test Methods for Measuring Adhesion by Tape Tests.
 - 4. ASTM E 329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing.
 - 5. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide modular metal wall panel system meeting performance requirements as determined by application of specified tests by a qualified testing agency on manufacturer's standard assemblies.
- B. Structural Performance: Design modular metal wall panel system fabricated to withstand the effects of wind loads under conditions indicated below.
 - 1. Wind Loads: Determine loads based on uniform pressure, building category, exposure category, and basic wind speed indicated on drawings.
 - 2. Air/Moisture Barrier: Refer to Division 07 Section "Insulated-Composite Metal Wall Panel Backup system".
 - 3. Air/Moisture Barrier: Refer to Division 07 "Air Barrier" section.
- C. Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction.
- D. Wall systems that incorporate foam plastic insulation must be tested by the foam plastic supplier in accordance with NFPA-285.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Approved manufacturer listed in this Section with minimum 10 years' experience in manufacture of similar products in successful use in similar applications.
 - 1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Sample submittal from similar project.
 - d. Project references: Minimum of 5 installations not less than 5 years old, with Owner and Architect contact information.
 - e. Sample warranty.
 - 2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
 - 3. Approved manufacturers must meet separate requirements of Submittals Article.
- B. Wall Systems Installer Qualifications: Experienced Installer with minimum of 5 years' experience with successfully completed projects of a similar nature and scope.
- C. Mockups: Build mockup in size and location indicated. Show details of modular metal panel system. Demonstrate methods and details of installation. Show details of vertical joints, penetrations, doors, windows, louvers, pipe openings, inside and outside corners, top and bottom of wall, horizontal and vertical joints.
 - 1. Approval of mockup does not relieve Contractor of responsibility to comply with all requirements of contract documents.
 - 2. Approved mockup may become part of installation if approved by Architect.

1.6 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Conduct preinstallation meeting at site attended by Owner, Architect, manufacturer's technical representative, and other trade contractors.
 - 1. Coordinate building framing in relation to modular metal panel system.
 - 2. Coordinate installation of building air and water barrier behind composite wall panel system.
 - 3. Coordinate window, door and louver, and other openings and penetrations of modular metal panel system.

1.7 ACTION SUBMITTALS

- A. Product Data: Manufacturer's data sheets for specified products.
- B. Shop Drawings: Provide shop drawings prepared by manufacturer or manufacturer's authorized dealer. Include full elevations showing openings and penetrations. Include details of each condition of installation and attachment. Provide details at a minimum scale 3-inch per foot of all required trim and extrusions needed for a complete installation
 - 1. Include data indicating compliance with performance requirements.
 - 2. Indicate points of supporting structure that must coordinate with modular metal panel system installation.
- C. Field Measurements not by East Coast Metal Systems: It is the panel installer's responsibility to verify locations of structural members, adjoining construction and wall openings dimensions by field measurement before panel fabrication and indicate measurements on final shop drawings.
- D. Samples for Initial Selection: Provide representative color charts of manufacturer's full range of colors.

1.8 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Indicating compliance of products with requirements, from a qualified independent testing agency.
- B. Qualification Information: For Installer.
- C. Manufacturer's warranty: Submit sample warranty.

1.9 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Protect products of modular metal panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage.
 - 1. Deliver, unload, store, and erect modular metal wall panel system and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.

1.11 WARRANTY

- A. Special Manufacturer's Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace metal wall panel assemblies that fail in materials and workmanship within [two] years from date of Substantial Completion.
- B. Special Panel Finish Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace wall panels that display evidence of deterioration of finish within [20] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 System Description

- A. Modular metal wall panel system consisting of aluminum panels in a rainscreen application as part of the assembly described below.
 - 1. **Modular Metal Wall Panels over Multi-Component Framed Wall System:** Modular metal wall panels applied as exterior rainscreen cladding over wall framing specified in Division 05 Section "Cold-Formed Metal Framing" with exterior sheathing specified in Division 06 Section "Sheathing", an applied membrane that provides air, moisture, and water vapor control specified in Division 07 Section "Air Barriers", and insulation within the framing specified in Division 07 Section "Thermal Insulation". Metal wall panel installation specified in this Section includes [secondary metal subgirt framing and] mounting clips for panel attachment.
 - a. Water-resistive barrier is provided under Division 07 Section "Weather Barriers."
 - b. Air, moisture, and water vapor control membrane is provided under Division 07 Section "Air Barriers."
 - 2. **Modular Metal Wall Panels over Outside-Insulated Framed Wall System:** Modular metal panels applied as exterior rainscreen cladding over wall framing specified in Division 05 Section "Cold-Formed Metal Framing" with exterior sheathing specified in Division 06 Section "Sheathing", an applied membrane that provides air, moisture, and water vapor control specified in Division 07 Section "Air Barriers", and insulation [within the framing and] applied outboard of the sheathing specified in Division 07 Section "Thermal Insulation". Metal wall panel installation specified in this Section includes [secondary metal subgirt framing and] mounting clips for panel attachment.
 - a. Water-resistive barrier is provided under Division 07 Section "Weather Barriers."
 - b. Air, moisture, and water vapor control membrane is provided under Division 07 Section "Air Barriers."
 - 3. **Modular Metal Wall Panels over Masonry Wall System:** Modular metal wall panels applied as exterior rainscreen cladding over a masonry wall [and rigid board insulation] specified in Division 04 Section "Unit Masonry" and an applied membrane that provides air, moisture, and water vapor control specified in Division 07 Section "Air Barriers". Metal wall panel installation specified in this Section includes secondary metal subgirt framing for panel attachment.

- a. Water-resistive barrier is provided under Division 07 Section "Weather Barriers."
- b. Air, moisture, and water vapor control membrane is provided under Division 07 Section "Air Barriers."

2.2 MANUFACTURERS

- A. Basis of Design: **EC-300 Modular metal wall panel system.** Provide basis of design product, or comparable product approved by Architect prior to bid.
 1. East Coast Metal Systems, Inc. Triadelphia, WV 26059. Tel: (800)345-6755. Tel: (304)909-4220. Fax: (304)909-4242. Web: www.ECMSINC.net.

2.3 MATERIALS

- A. Aluminum Sheet: Smooth surface coil-coated sheet, ASTM B209, 3003-H14 Alloy.
 1. Aluminum Material: Tension-leveled
 2. Thickness: 0.063" nominal
 3. Weight: Approximately 1.6 lb. per square foot

2.4 Modular Metal Panels

- A. Modular Metal Panels: Factory-formed, aluminum-faced panels fabricated from .040", .050", 0.63", 080" thick aluminum coil coated sheet.
 1. Panel Depth: 1-3/8"(35mm).
 2. Panel Flatness: Maximum allowable distortion: 1/32 inch in 24 inches (0.813 mm in 610 mm) in any direction. Panel lines, breaks, and angles shall be sharp and true, and surfaces shall be free from warp or buckle.
 3. Clips: Manufacturer's standard clips as required to meet performance requirements.
 4. Panel Joints: 3/4"(19mm)
 5. Panel Sizes: As indicated on drawings.
- B. Sheet Surface: Smooth.
- C. Aluminum Face Sheet Coil-Coated Finish:
 1. Color: [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color].
- D. Unexposed Finish: Manufacturer's standard nominal 0.5 mil nominal DFT backer coating...
- E. Exposed Trim, flashings and Fastener Finish: Match panel finish.
 1. Thickness: 0.063" nominal
 2. Refer to section 07 6200

2.5 SECONDARY METAL FRAMING

- A. Miscellaneous Framing Components, General: Cold-formed metallic-coated steel sheet, ASTM A 653/A 653M, G90 (Z180) hot-dip galvanized zinc coating.
 1. Hat Channels: 0.064 inch/16 ga. (1.6 mm) minimum nominal thickness.

2. Sill Channels: 0.063 inch/16 ga. (1.6 mm) minimum nominal thickness.

2.6 ACCESSORIES

- A. Provide factory-formed clips, shims, flashings, sealants, and tapes for a complete installation.

2.7 FABRICATION

- A. General: Fabricate modular metal panels and accessories at factory identical to tested units using manufacturer's standard procedures and processes necessary to meet performance requirements.
 1. Provide components of modular metal panel system that are products of one manufacturer, including modular metal panels, head and sill trim, bottom weep, starter flash, and metal copings.
- B. Modular Metal Panels: Fabricate modular metal panels requiring no further fabrication or modification in field.
 1. Horizontal Joints: Dry seal.
 2. Vertical Joints: Dry seal
 3. Reveals: 3/4"(19mm)
 4. Standard System Depth: 1-3/8"(35mm)

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine modular metal panel system substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of modular metal panel system.
 1. Inspect framing that will support modular metal panel system to determine if support components are installed as indicated on approved shop drawings and are within tolerances acceptable to modular metal wall panel system manufacturer.
 - a. Maximum deviations acceptable to modular metal panel system manufacturer:
 - 1) 1/4-inch in 20 feet (6.4 mm in 6 m) vertically or horizontally from face plane of framing.
 - 2) 1/2-inch (12.7 mm) maximum deviation from flat substrate on any building elevation.
 - 3) 1/8-inch in 5 feet (3.2 mm in 1.5 m).
 2. Confirm presence of acceptable framing members to match installation requirements of modular metal panel system.
 - a. Confirm framing minimum .064 inch/16 ga. (1.6 mm) at maximum 16 inch (406 mm) spacing.
 3. Verify that window, door, louver and other penetrations match layout on shop drawings.

- B. Advise General Contractor of out-of-tolerance work and other deficient conditions prior to proceeding with modular metal wall panel system installation.

3.2 MODULAR METAL PANEL SYSTEM INSTALLATION

- A. General: Install modular metal panel system in accordance with approved shop drawings and manufacturer's recommendations.
- B. Installation: Attach panels to metal sub-framing using recommended clips, screws, fasteners, sealants, and adhesives indicated on approved shop drawings.
 - 1. Horizontal Joinery: Working from base of installation to top, connect upper panel to lower panel at joinery.
 - 2. Vertical Joinery: Working from left of installation to right, connect trailing panel to leading panel at joinery.
 - 3. Galvanic Action: Where elements of modular metal wall system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by manufacturer.
- C. Rainscreen Installation: Proceed with installation of manufacturer's dry seal joinery. Keep open spaces in horizontal and vertical joinery intended to ventilate cavity behind system.

3.3 CLEANING AND PROTECTION

- A. Remove temporary protective films within 2 weeks of erection. Clean finished surfaces as recommended by metal wall panel manufacturer. Clear weep holes and drainage channels of obstructions, dirt, and sealant. Maintain in a clean condition during construction.
- B. Replace damaged panels and accessories that cannot be repaired by field repair.

END OF SECTION