

## SECTION 074213 FORMED METAL WALL PANELS

This suggested guide specification has been developed using the current edition of the Construction Specifications Institute (CSI) "Manual of Practice," including the recommendations for the CSI 3 Part Section Format and the CSI Page Format. Additionally, the development concept and organizational arrangement of the American Institute of Architects (AIA) MASTERSPEC Program has been recognized in the preparation of this guide specification. Neither CSI nor AIA endorse specific manufacturers and products. The preparation of the guide specification assumes the use of standard contract documents and forms, including the "Conditions of the Contract," published by the AIA.

## Part 1 - GENERAL

## 1.1 Description of Work

- A. This section covers the pre-finished, pre-fabricated exposed fastener metal roof and wall system. All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section.
- B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.
- C. Related Work Specified Elsewhere.
  - 1. Roof Deck structural steel, flat roof systems, perimeter edge systems. Roof hatches, firestopping not included in this section.

## 1.2 Summary

- A. Section Includes:
  - 1. Factory formed exposed fastener metal roof and wall panels
- B. Related work specified elsewhere. (Note: select from the below or add appropriate sections)
  - 1. Section 051200 - Structural Steel Framing
  - 2. Section 054000 - Cold-Formed Metal Framing
  - 3. Section 076200 - Sheet Metal Flashing and Trim

## 1.3 Definitions

- A. Metal Roof/Wall Panel Assembly: Metal roof/ panels, attachment system components, miscellaneous metal framing, thermal, and accessories necessary for a complete weathertight roofing system.
- B. References:
  - 1. American Society for Testing and Materials (ASTM)
    - a. ASTM B209: Aluminum and Aluminum Alloy Sheet and Plate
  - 2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
    - a. SMACNA Architectural Sheet Metal Manual, 1993 edition
  - 3. Aluminum Association
    - a. Aluminum Design Manual
  - 4. Metal Construction Association
    - a. Preformed metal Wall Guidelines
  - 5. Code References
    - a. ASCE, Minimum Loads for Buildings and Other Structures
    - b. IBC International Building Code

## 1.4 Quality Assurance

- A. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
- B. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.
- C. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

## 1.5 Substitutions

- A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.
- B. Manufacturers listed in this section are prequalified manufacturers. Substitution of manufacturer's products for those specified shall not be allowed at any time during construction.

## 1.6 Roof System Performance Testing

- A. General Performance: Metal roof/wall panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
- B. Roof System shall be designed to meet applicable building code Wind Load requirements.
- C. Panels to meet:
  - 1. Roof/Wall System shall be designed to meet applicable Local Building Code and the System shall have tested by the Manufacturer per ASTM E1592 and have the applicable Load Tables published from this testing for loads.

## 1.7 Submittals

- A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
- B. Provide finish samples of all colors specified.
- C. Shop drawings: Show fabrication and installation layouts of metal roof panels, metal wall panels or metal soffit panels, details of edge conditions, side-seam joints, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work
- D. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, base don input from installer of the items involved:
  1. Roof panels and attachments.
  2. Metal trusses, bracings and supports.
  3. Roof-mounted items including snow guards and items mounted on roof curbs.
- E. LEED Submittals
  1. Product Test reports for Credit SS 7.2. For roof panels, indicating that the panels comply with Solar Reflective Index requirement.  
{Specifier Note: Select if solar reflective coating is specified}
    - a. Product data for Credit MR 4.1 and credit MR 4.2: Indicating the percentages by weight of postconsumer and preconsumer recycled content for products having recycled content.

## 1.8 Delivery, Storage and Handling

- A. Ordering: Comply with manufacturer's ordering instruction and lead time requirements to avoid construction delays.
- B. Deliver components, sheets, metal roof/wall panels and other manufactured items so as not to be damaged or deformed. Package metal roof/wall panels for protection during transportation and handling.
- C. Unload, store and erect metal roof/wall panels in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof/wall panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

## 1.9 Project Conditions

- A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed.
- B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

## 1.10 Coordination

- A. Coordinate sizes and locations of roof curbs, equipment supports and roof penetrations with actual equipment provided.
- B. Coordinate metal roof panels with rain drainage work, flashing, trim and construction of decks, parapet walls and other adjoining work to provide a leak-proof, secure and noncorrosive installation.

## PART 2 - Products

## 2.1 Panel Design

- A. General: Provide factory-formed, prefinished, lappable exposed fastener, structural ribbed metal roof/wall panel system, that has been pretested and certified by manufacturer to comply with specified requirements under installed conditions.
- B. Roof panels shall be exposed fastener {Specifier Note: Choose from panel profile below}:
  1. 7.2 panel, with 1 1/2" high ribs at 7.2" on centers. The width of the crests shall be 2"; the width of the valleys shall be 2". Coverage for this panel shall be 36" for both roofing and wall applications.  
or  
Corrugated panels, with 2.67" x 7/8" deep profile ribs, or 2.67" x 1/2" deep profile ribs total coverage of Roof/Wall panels when installed shall be 34.67" coverage with 2 lapped ribs for roofing and 37.33" coverage with 1 lapped rib for siding.
- C. Structural Requirements: Engineer panels for structural properties in accordance with latest edition of American Iron and Steel Institute's Cold Formed Steel Design Manual using effective width concept and Aluminum Associations Aluminum Design Manual.
- D. Forming: Use continuous end rolling method. No end laps on panels. No portable rollforming machines will be permitted on this project, no installer-owned or installer-rented machines will be permitted. It is the intent of the Architect to provide Factory-Manufactured panel systems only for this project.
- E. Panels shall be directly fastened to the substrate.
- F. The panel shall have an overlapping sidelap feature.

## 2.2 Acceptable Manufacturers

- A. This project is detailed around the roofing/siding product, Reynolux®, of Arconic Architectural Products LLC (AAP) {Specifier Note: Choose from products below}:
  1. 7.2 Rib Panel
  2. 7/8" x 2.67" Corrugated Panel
  3. 1/2" x 2.67" Corrugated Panel



### 3.3 Installation

- A. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
  - B. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation. Conform to standards set forth in SMACNA architectural sheet metal manuals and approved shop drawings for this project.
  - C. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.
  - D. Install panel system so it is watertight, without waves, warps, buckles or distortions, and allow for thermal movement considerations.
  - E. Abrasive devices shall not be used to cut on or near roof or wall panel system.
  - F. Apply sealant tape or caulking as necessary at flashing and panel joints to prevent water penetration.
  - G. Remove any strippable film immediately upon exposure to direct sunlight.
  - H. Vapor retarder: The joints, perimeter, and all openings shall be sealed per the manufacturer's instructions to provide a continuous vapor retarder.
- I. Underlayment (solid substrate):
- 1. Provide one layer of 30# felt with horizontal overlaps and endlaps staggered between layers.
  - 2. Provide ice and water shield membrane at all valley and eave conditions as well as any area at less than a 3:12 slope.
  - 3. Lay parallel to ridge line with 2½" horizontal laps and 6" vertical laps.

### 3.4 Damaged Material

- A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

END OF SECTION 074213

### Disclaimer

Laws and building and safety codes governing the design and use of AAP's products, and specifically aluminum composite materials, vary widely. It is the responsibility of the owner, the architect, the general contractor, the installer and the fabricator/transformer, consistent with their roles, to determine the appropriate materials for a project in strict conformity to all applicable national, regional and local building codes and regulations. REYNOBOND® FR AND AS3000B HAVE SUCCESSFULLY PASSED US NFPA 285, E84 AND CANADA S134, S102 TESTS AS A PART OF AN ASSEMBLY. ENSURE THE PRODUCT IS USED IN A SYSTEM THAT COMPLIES WITH ALL APPLICABLE REGULATIONS. REYNOBOND® PE IS COMBUSTIBLE; IT COULD CATCH FIRE AND BURN. ANY LABORATORY TESTING INFORMATION PROVIDED BY AAP LLC APPLIES ONLY TO THE PARTICULAR PRODUCT OR ASSEMBLY TESTED AND DOES NOT NECESSARILY REPRESENT HOW PRODUCTS WILL ACTUALLY PERFORM IN USE. REPORTS AND TEST DATA CORRESPONDING TO A PARTICULAR TESTED PRODUCT SAMPLE OR ASSEMBLY ARE NOT A GUARANTEE THAT THE SAME PRODUCT OR ASSEMBLY WOULD ALWAYS ACHIEVE THE SAME TEST RESULT.

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