

**SECTION 074013**

**METAL SIDING PANELS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section specifies corrugated metal wall panels as shown.

**1.2 RELATED WORK**

- A. Sustainable design requirements and procedures including submittal requirements: Section 018111, SUSTAINABLE DESIGN REQUIREMENTS.
- B. Procedures and requirements for managing and disposing construction and demolition waste: Section 017419, CONSTRUCTION WASTE MANAGEMENT.
- C. Sealant: Section 079200, JOINT SEALANTS.
- D. Color and texture of finish: Section 090600, SCHEDULE FOR FINISHES.

**1.3 MANUFACTURER'S QUALIFICATIONS**

- A. Metal wall panels shall be products of a manufacturer regularly engaged in the fabrication and erection of metal panels of the type and design shown and specified.

**1.4 SUBMITTALS**

- A. Submit in accordance with Section 013323, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples: Metal panel, 150 mm (six inch) square, showing finish, each color and texture.
- C. Shop Drawings: Wall and roof panels, showing details of construction and installation. Collateral steel framing thickness and kind of material, closures, flashing, fastenings and related components and accessories.
- D. Manufacturer's Literature and Data: Wall and roof panels, including design loading data showing compliance with project design criteria.
- E. LEED Submittals: Submit in accordance with Section 018111.
  - 1. LEED submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated LEED requirements.
  - 2. LEED Product Data Submittal Form: Submit completed product data form provided by the Contracting Officer's Representative; certified by vendor, installer, subcontractor, and/or manufacturer as appropriate.

**1.5 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. American Society for Testing and Materials (ASTM):

1. A653/A653M-10 Steel Sheet, Zinc-Coated (Galvanized), or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  2. A463-10 Steel Sheet, Cold-Rolled, Aluminum-Coated, by the Hot-Dip Process
  3. A924/A924M-10 Steel Sheet, Metallic Coated by the Hot-Dip Process
  4. A1008/A1008M-10 Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength Low Alloy
- E119-10 Fire Test of Building Construction and Materials

1.6 WARRANTY

- A. Work subject to the terms of the Article "Warranty of Construction", FAR clause 52.246-21. Provide manufacturer's specialty warranty as follows:
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship 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: Two years.
- C. 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 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 D 2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: 20 years.

**PART 2 - PRODUCTS**

**2.1 SHEET STEEL**

- A. Minimum 18 gage (1.2mm, 0.047 inch) for wall anels.
- B. Steel, Sheet, Galvanized: ASTM A653/A653M, Structural.
1. Grade 50, galvanized coating conforming to ASTM A924/A924M, Class Z 275 G-90.

**2.2 FASTENERS**

- A. Fasteners for steel panels shall be galvanized or cadmium plated steel.

- B. Fasteners of size, type and holding strength as recommended by manufacturer, including design loading data showing compliance with project design criteria.

### 2.3 FABRICATION

- A. Uninsulated metal wall panels shall be single sheets, of approximate overall depth and configuration shown on drawings. Construct panels as follows:
  - 1. Wall panels:
    - a. 18 gage (1.2mm, 0.047 inch) galvanized steel. Corrugated profile as indicated on drawings.
  - 2. Accessories and flashing shall be the same material as the panels. Thickness and installation of accessories and flashing shall be as recommended by the panel manufacturer.

### 2.4 FINISH

- A. For steel face sheets, the finishes shall be as follows:
  - 1. Fluorocarbon finish, consisting of a prime coat and a two polyvinylidene fluoride finish coat of 1.0 mil minimum dry film thickness on one side, and a wash coat of 0.5 mil minimum dry film thickness applied to reverse side. (ADD#04)
  - 2. Comply with requirements of Section 099654. (ADD#04)

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Install panels in accordance with the manufacturer's approved erection instructions and diagrams, except as specified otherwise. Panels shall be in full and firm contact with supports and with each other at side and end laps. Where panels are cut in the field, or where any of the factory applied coverings or coatings are abraded or damaged in handling or installation, they shall, after the necessary repairs have been made with material of the same type and color as the weather coating, be approved before being installed. All cut ends and edges, including those at openings through the sheets shall be sealed completely. Correct defects or errors in the materials in an approved manner. Replace materials which cannot be corrected in an approved manner with non-defective material. Provide molded closure strips where indicated and whenever sheets terminate with open ends after installation.
- B. Wall Panels: Apply panels with the configuration in a vertical position. Provide panels in the longest obtainable lengths, with end laps occurring only at structural members. Seal side and end laps with joint sealing material. Flash and seal walls at the base, at the top, around windows, door frames, framed louvers, and other similar openings. Install closure strips, flashings, and sealing material in an approved manner that will assure complete weather tightness. Flashing will not be required where approved "self-flashing" panels are used.

- C. Flashing: All flashing and related closures and accessories in connection with the preformed metal panels shall be provided as indicated and as necessary to provide a watertight installation. Details of installation, which are not indicated, shall be in accordance with the panel manufacturer's printed instruction and details, or the approved shop drawings. Installation shall allow for expansion and contraction of flashing.
- D. Fasteners: Fastener spacings shall be in accordance with the manufacturer's recommendations, and as necessary to withstand the design loads indicated. Install fasteners in valleys or crowns as recommended by the manufacturer of the sheet being used. Install fasteners in straight lines within a tolerance of 13 mm (1/2-inch) in the length of a bay. Drive exposed penetrating type fasteners normal to the surface, and to a uniform depth to seat gasketed washers properly, and drive so as not to damage factory applied coating. Exercise extreme care in drilling pilot holes for fastenings to keep drills perpendicular and centered in valleys, or crowns, as applicable. After drilling, remove metal filings and burrs from holes prior to installing fasteners and washers. Torque used in applying fasteners shall not exceed that recommended by the manufacturer. Remove panels deformed or otherwise damaged by over-torqued fastenings, and provide new panels. Remove metal shavings and filings from roofs on completion to prevent rusting and discoloration of the panels.

### **3.2 PROTECTION AND CLEANING**

- A. Protect panels and other components from damage during and after erection, and until project is accepted by the Government.
- B. After completion of work, all exposed finished surfaces of panels shall be cleaned of soil, discoloration and disfiguration. Touch-up abraded surfaces of panels.

### **3.3 CONSTRUCTION WASTE MANAGEMENT**

- A. General: Comply with Contractor's Waste Management Plan and Section 017419, CONSTRUCTION WASTE MANAGEMENT.
- B. To the greatest extent possible, separate reusable and recyclable products from contaminated waste and debris in accordance with the Contractor's Waste Management Plan. Place recyclable and reusable products in designated containers and protect from moisture and contamination.

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