

**SECTION 07 40 00
ROOFING AND SIDING PANELS**

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies uninsulated metal wall and roof panels as shown.

1.2 RELATED WORK

- A. Vapor retarder: Section 07 22 00, ROOF AND DECK INSULATION.
- B. Sealant: Section 07 92 00, JOINT SEALANTS.
- C. Color and texture of finish: Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 MANUFACTURER'S QUALIFICATIONS

Metal wall and roof 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 01 33 23, 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. including thickness and kind of material, closures, flashing, fastenings and related components and accessories.
- D. Manufacturer's Literature and Data: Wall and roof panels

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extend referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A653/A653M-10..... Steel Sheet, Zinc-Coated (Galvanized), or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - A463-10..... Steel Sheet, Cold-Rolled, Aluminum-Coated, by the Hot-Dip Process
 - A924/A924M-10..... Steel Sheet, Metallic Coated by the Hot-Dip Process
 - A1008/A1008M-10..... Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength Low Alloy
 - B209/209M-07..... Aluminum and Aluminum Alloy Sheet and Plate
 - C1396-11..... Standard Specification for Gypsum Board

PART 2 - PRODUCTS**2.1 SHEET STEEL**

- A. Minimum 0.8mm thick for wall and roof panels.
- B. Steel, Sheet, Galvanized: ASTM A653/A653M, Structural.
 - 1. Grade 40, galvanized coating conforming to ASTM A924/A924M, Class Z 275 G-90.
- C. Steel, Sheet, Commercial: ASTM A1008, Type C.
- D. Steel, Sheet, Aluminized: ASTM A463. Steel shall be coated on both sides with 0.5 ounce of aluminum per square foot (0.15 Kg/sm).

2.2 FASTENERS

Fasteners for steel panels shall be galvanized or cadmium plated steel. Fasteners of size, type and holding strength as recommended by manufacturer.

2.3 FABRICATION

- A. Uninsulated metal wall and roof panels shall be single sheets, of approximate overall depth and configuration shown on drawings. Connection between panels shall be by interlocking joints filled with sealing compound as specified in Section 07 92 00, JOINT SEALANTS. Furnish wall panels in one continuous length for full height or at least one story height with no horizontal joints, except at openings. Furnish roof panels in one continuous length of roof span and provide cut-outs as required for passage of pipes, conduits, vents and the like. Construct panels as follows:
 - 1. Wall panels:
 - a. 24 ga. galvanized steel.
 - 2. Roof Panels:
 - a. 24 ga. galvanized steel.
 - 3. 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. Silicone polyester finish, consisting of a chemical pre-treatment of the galvanized steel, then applying an epoxy prime coat of 0.2 mil minimum dry film thickness; then a silicone polyester finish coat of 0.8 mil minimum dry film thickness on one side and polyester prime coat of 0.5 mil minimum dry film thickness applied to reverse side.

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 nondefective 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 full heights from base to eave with no horizontal joints except at the junctions of door frames, window frames, louver panels, and similar locations. Seal side and end laps with joint sealing material. Flash and seal walls at the base, at the top, 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. Roof Panels: Apply roofing panels with the configurations parallel to the slope of the roof. Provide roofing panels in the longest lengths obtainable, with end laps occurring only at structural members full lengths from ridge (or ridge panel) to eaves, with no transverse joints. Lay all side laps away from the prevailing wind, and seal side and end laps with joint sealing material. Flash and seal the roof at the ridge, at eaves and rakes, at projections through the roof, and elsewhere as necessary. Install closure strips, flashing, and sealing material in an approved manner that will assure complete weather tightness.
- D. 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.

- E. Fasteners: Fastener spacings shall be in accordance with the manufacturer's recommendations, and as necessary to withstand the design loads indicated. 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. 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.

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