

SECTION 07 40 00
ROOFING AND SIDING PANELS

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies metal wall panels.

1.2 RELATED WORK

- A. Sealant: Section 07 92 00, JOINT SEALANTS.
- B. Color and texture of finish: Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 MANUFACTURER'S QUALIFICATIONS

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 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 panels, showing details of construction and installation thickness and kind of material, closures, flashing, fastenings and related components and accessories.
- D. Manufacturer's Literature and Data.

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

C553-08..... Mineral Fiber Blanket Thermal Insulation for
Commercial and Industrial Applications
C591-09..... Unfaced Preformed Rigid Cellular
Polyisocyanurate Thermal Insulation
C612-10..... Mineral Fiber Block and Board Thermal
Insulation
E119-10..... Fire Test of Building Construction and
Materials

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Panels shall be 4mm PE core, aluminum composite material.
- B. Composite panels shall have a Class "A" building material rating when tested in accordance with ASTM E84 (Steiner Tunnel Test) and shall exhibit a flame spread of 15 and a smoke developed rating of 120, with a center panel joint.
- C. Panels shall have passed the ASTM E108 modified test.

2.2 FABRICATION, GENERAL

- A. Composition
 - 1. Aluminum composite material shall be composed of a thermoplastic core sandwiched between two aluminum sheets formed in a continuous process with no applied glues or adhesives.
 - 2. Bond integrity per ASTM D1781-76 and ASTM C481 Cycle B, shall be a minimum of 40 in-lb.in. (Peel Strength)
- B. Aluminum face sheets
 - 3. Thickness 0.5 mm (0.020 inches) of 3105 H25 aluminum alloy.
- C. Tolerances
 - 1. Panel bow shall not exceed 3.8% of panel overall dimension in width or length.
 - 2. Panel dimensions shall be such that there will be an allowance for field adjustment and thermal movement.
 - 3. Panel lines, breaks and curves shall be sharp, smooth and free from warps or buckles.
- D. Panel surfaces shall be free of scratches or marks caused during fabrication.
- E. Ensure that entire project is manufactured from single color, coil paint run to ensure color uniformity.

- F. If a metallic color is selected ensure that panel grain is maintained. Under no circumstances are panel blank sizes to be rotated even if material waste is increased.

2.3 ACCESSORIES

- A. Panel attachment clips: Provide pre-engineered installation locations. Clips to field hook and snap into pre-punched slot in panel return flange. Fabricated clips from extruded aluminum material - panel clips to ship loose for field installation.
- B. Fasteners: As recommended by the panel manufacturer.
- C. All hidden fasteners shall be Climaseal coated or stainless steel.
- D. Flashing: Aluminum, same finish as for aluminum panel where exposed; secured with concealed fastening method.
- E. Panel System Subgirts: Provide G90 galvanized steel of gauge and spacing required for panel system structural requirements, as recommended by panel manufacture and in accordance with approved shop drawings. To avoid galvanic reaction, separate dissimilar metals.

2.4 FINISHES, GENERAL

- A. Comply with NAAMM's Metal Finishes Manual for architectural metal products recommendations for applying and designating finishes.

2.5 ALUMINUM FINISHES

- A. Panel Finishes:
1. Coating shall be Spray-Applied Fluorocarbon Resin utilizing 70% Kynar 500 resins. Color as selected by owner/consultant from manufacturer's standard colors.
 2. Number of Coats: 2-coat. Coating shall be factory applied on a continuous process paint line. Coating shall consist of a 0.2 mil prime coat, a 0.75 mil barrier coat, a 0.75 mil metallic/color coat containing 70% Kynar resins, and a 0.5 mil clear coat containing 70% Kynar resins (Note mil thickness is approximate.)
 3. Relevant to the color selected, material to be painted in accordance with either AAMA specification 2605 or 2604.
 4. Provide factory applied strippable plastic film for protection during fabrication and installation.
- B. Finish Performance:
1. Pencil Hardness - ASTM D3352-74

2. Shall be HB-H minimum (Eagle Turquoise).
3. Impact Adhesion - ASTM D294-84
 - a. Coating shall show no cracking and no loss of adhesion
4. Cure Test - NCCA 11-18
 - a. Coating shall withstand 50+ double rubs of MEK.
5. Humidity Resistance - ASTM D2247-87
 - a. Coating shall show no blisters after 3000 hours of 100% humidity at 95°F.
6. Salt Spray Resistance - ASTM B117-85
 - a. After 3000 hours of exposure to 5% salt fog, at 95°F, scored sample shall show none or few #8 blisters, and less than 1/8" average creepage from scribe.
7. Weatherometer Test - ASTM D882-86/G23-88 Coating shall show no cracking, peeling, blistering or loss of adhesion after 2000 hours.
 - a. Chalking Resistance - ASTM D659-86
 - b. No chalking greater than #8 after 10 years Florida exposure at 45°S.
 - c. Color Change - ASTM D2244-74
 - d. Color change shall not exceed 5 NBS units after 10 years Florida exposure at 45°S.
 - e. After 5000 hours in Atlas Weatherometer coating shall show no objectionable chalking or color change.
8. Abrasion Resistance - ASTM D968-81 Coating shall resist 65+/- 15 liters/mil minimum of falling sand.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate setting, drawings, diagrams, templates, instructions, and directions for installation. Panel substructure shall be level and plumb. Panel substructure shall be structurally sound as determined by that subcontractor's engineer. Panel substructure shall be free of defects detrimental to work and erected in accordance with established building tolerances. Coordinate delivery of such items to project site.

3.2 INSTALLATION

- A. Erect panels level and plumb, in proper alignment in relation to substructure framing and established lines.
- B. Panels shall be erected in accordance with approved shop drawings.
- C. Panel anchorage shall be structurally sound and per engineering recommendations.
- D. Where aluminum materials come in contact with dissimilar materials, an isolation shim or tape shall be installed at fastening locations.
- E. Locate and place wall panels level, plumb, and at indicated alignment with adjacent work.

3.3 CLEANING AND PROTECTING

- A. Clean exposed surfaces of wall panels that are not protected by temporary covering to remove fingerprints and soil during construction period.
- B. Clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- C. Protect wall panels from damage during construction. Use temporary protective coverings where needed as approved by the wall panel manufacturer.
- D. Clean and touch up minor abrasions in finish with air-dried coating that matches color and gloss, and is compatible with, factory-applied finish coating.

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