

SECTION 07410

METAL ROOF AND WALL PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Factory-formed panels in vertical installation.
- B. Factory-formed panels in horizontal installation.
- C. Metal flashings and trim.

1.2 RELATED SECTIONS

- A. Section 05400 - Cold Formed Metal Framing.
- B. Section 07210 - Building Insulation.
- C. Section 07900 - Joint Sealers.

1.3 REFERENCES

- A. AAMA 501.2 - Field Check of Metal Curtain Walls for Water Leakage; Architectural Aluminum Manufacturers Association.
- B. ASTM A 653/A 653M - Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot Dip Process.
- D. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- E. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
- F. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- G. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

- H. ASTM G 90 - Standard Practice for Performing Accelerated Outdoor Weathering of Non-Metallic Materials Using Concentrated Natural Sunlight.

1.4 PERFORMANCE REQUIREMENTS

- A. Panel Performance Requirements:
 - 1. Air infiltration: Maximum 0.06 cubic feet per minute per lineal foot (0.33 cu m per hour per linear meter) of seam at static pressure of 6.24 pounds per square foot when tested per ASTM E 283.
 - 2. Water penetration:
 - a. No uncontrolled water penetration through panel joints when tested in accordance with AAMA 501.2.
 - b. No uncontrolled water penetration through the panel joints at a static pressure of 6.24 pounds per square foot (2.9 kPa) when tested in accordance with ASTM E 331.
- B. Finish Performance Requirements:
 - 1. Color change and fade resistance: No cracking, peeling, blistering, or loss of adhesion when tested in accordance with ASTM G 90; color change, after removal of surface deposits such as dirt or chalk, maximum 5 NBS units.
 - 2. Humidity resistance: No blistering, peeling, or loss of adhesion, after 1,000 hours testing in accordance with ASTM D 2247.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's product literature for panel, finishes, and trim.
- C. Shop Drawings:
 - 1. Indicate layout of panels and panel sizes, including custom-fabricated panels if indicated; indicate each item of trim and accessories.
 - 2. Indicate in detailed drawings profile and gauge of interior and exterior sheets, locations and types of fasteners; indicate locations, gages, shapes, and methods of attachment of panels, trim and accessory items.

3. Indicate products/materials required for construction activities of this section not supplied by manufacturer of products of this section.
- D. Selection Samples: For each product requiring color selection, two sets of manufacturer's sample chips representing full range of colors and finishes available.
- E. Verification Samples: For each color and finish selected, two chips indicating match to selected color and finish.
- F. Quality Assurance Submittals:
 1. Certificates: Contractor's certification that:
 - a. Manufacturer of products of this section meets specified qualifications.
 - b. Installer of products of this section meets specified qualifications.
 2. Manufacturer's instructions: Printed installation instructions for each specified product.
- G. Closeout Submittals: Warranty documents issued and executed by manufacturer of products of this section, countersigned by Contractor.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum five (5) years documented experience installing products specified in this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Packing, Shipping, Handling and Unloading:
 1. Bundle panels in waterproof wrapping paper.
 2. Package trim and accessories in waterproof wrapping paper.
- B. Storage and Protection:
 1. Store products of this section in manufacturer's unopened packaging until installation of products.
 2. Maintain dry, heated storage area for products of this section until installation of products.

1.8 PROJECT/SITE CONDITIONS

- A. Field Measurements: Where conditions permit, obtain field measurements before cutting panels to size.

1.9 WARRANTY

- A. Manufacturer's Warranty: Panel manufacturer's standard warranty against defects in product workmanship and materials, including deterioration of panel finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: McElroy Metal, Inc.; P.O. Box 1148, Shreveport LA 71163; ASD. Tel. (800) 950-6531, Fax. (318) 747-8059.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.

2.2 MANUFACTURED UNITS

- A. Panels:
 - 1. Acceptable Product: Multi-Rib Panel.
 - 2. Profile: Major longitudinal ribs 1-3/16 inches (30 mm) deep, spaced 12 inches (305 mm) on center; minor longitudinal ribs centered between major ribs, spaced 3 inches (76 mm) on center; panel _____-run.
 - 3. Size: 36 inches (915 mm) cover width, lengths indicated on drawings.
 - 4. Purlin Bearing: Form panel with purlin bearing leg.
 - 5. Material: Galvalume steel sheet conforming to ASTM A 792, AZ55 coating; ___ gage (___ mm) sheet thickness.
 - 6. Material: Aluminum sheet conforming to ASTM B 209; _____ inch sheet thickness.
 - 7. Finish: Manufacturer's standard white polyester coating.
 - 8. Finish: Bare.
 - 9. Finish: Mill.
 - 10. Finish: Stucco embossed texture.
 - 11. Finish: Siliconized polyester color coat applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
 - 12. Finish: Polyvinylidene fluoride color coat, minimum 70 percent polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after

pretreatment and priming in accordance with coating manufacturer's recommendations.

13. Color: Selected from full range of manufacturer's standard colors.
14. Color: _____.
15. Color: Specified in Schedule at end of section.

B. Panels:

1. Acceptable Product: Mega-Rib Panel.
2. Profile: Longitudinal ribs 1-1/2 inches (38 mm) deep, spaced 7.2 inches (183 mm) on center.
3. Size: 28-3/4 inches (730 mm) cover width, lengths indicated on drawings.
4. Size: 36 inches (915 mm) cover width, lengths indicated on drawings.
5. Material: Galvalume steel sheet conforming to ASTM A 792, AZ55 coating; ___ gage sheet thickness.
6. Material: Galvanized steel sheet conforming to ASTM A 653, G90 coating; ___ gage sheet thickness.
7. Finish: Manufacturer's standard white polyester coating.
8. Finish: Bare.
9. Finish: Siliconized polyester color coat applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
10. Finish: Polyvinylidene fluoride color coat, minimum 70 percent polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
11. Color: Selected from full range of manufacturer's standard colors.
12. Color: _____.
13. Color: Specified in Schedule at end of section.

C. Panels:

1. Acceptable Product: MasterLok-90 Panel.
2. Profile: Major rib with seam fold 3 inches (76 mm) deep at longitudinal panel edges; two minor longitudinal ribs spaced 8-1/2 inches (216 mm) from panel edges.
3. Size: 24 inches (610 mm) cover width, lengths indicated on drawings.
4. Material: Galvalume steel sheet conforming to ASTM A 792, AZ55 coating; ___ gage sheet thickness.
5. Finish: Bare.

6. Finish: Polyvinylidene fluoride color coat, minimum 70 percent polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
 - a. Color: Selected from full range of manufacturer's standard colors.
 - b. Color: _____.
 - c. Color: Specified in Schedule at end of section.

D. Panels:

1. Acceptable Product: Medallion I Panel.
2. Profile: Standing seam pan with seam legs at longitudinal panel edges.
3. Profile: Standing seam pan with seam legs at longitudinal panel edges; minor longitudinal rib at panel center.
4. Size: 12 inches (305 mm) cover width, lengths indicated on drawings.
5. Material: Galvalume steel sheet conforming to ASTM A 792, AZ55 coating; 24 gage (0.61 mm) sheet thickness.
6. Finish: Polyvinylidene fluoride color coat, minimum 70 percent polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
 - a. Color: Selected from full range of manufacturer's standard colors.
 - b. Color: _____.
 - c. Color: Specified in Schedule at end of section.
7. Battens: Manufacturer's standard sheet metal batten cap matching panel material and gage, break-formed to 1 inch deep profile for snap-on fit to standing seams at panel intersections.
 - a. Color: Match panel finish.
 - b. Color: Selected from full range of manufacturer's standard colors.
 - c. Color: _____.
 - d. Color: Specified in Schedule at end of section.

E. Panels:

1. Acceptable Product: Medallion II Panel.
2. Profile: Standing seam pan with seam legs at longitudinal panel edges.
3. Profile: Standing seam pan with seam legs at longitudinal panel edges; minor longitudinal rib at panel center.

4. Size: 13 inches (330 mm) cover width, lengths indicated on drawings.
5. Material: Galvalume steel sheet conforming to ASTM A 792, AZ55 coating; 24 gage (0.61 mm) sheet thickness.
6. Finish: Polyvinylidene fluoride color coat, minimum 70 percent polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
 - a. Color: Selected from full range of manufacturer's standard colors.
 - b. Color: _____.
 - c. Color: Specified in Schedule at end of section.
7. Battens: Manufacturer's standard sheet metal batten cap matching panel material and gage, break-formed to 1-1/2 inches (38 mm) wide by 1-1/2 inches (38 mm) deep channel profile for snap-on fit to standing seams at panel intersections.
 - a. Color: Match panel finish.
 - b. Color: Selected from full range of manufacturer's standard colors.
 - c. Color: _____.
 - d. Color: Specified in SCHEDULES Article of this section.

F. Panels:

1. Acceptable Product: Medallion-Lok Panel.
2. Profile: Standing seam pan with male seam fold 1-5/8 inches (41 mm) deep and female seam fold 1-3/4 inches (44 mm) deep at longitudinal panel edges.
3. Size: 16 inches (406 mm) cover width, lengths indicated on drawings.
4. Material: Galvalume steel sheet conforming to ASTM A 792, AZ55 coating; 24 gage (0.61 mm) sheet thickness.
5. Finish: Polyvinylidene fluoride color coat, minimum 70 percent polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
 - a. Color: Selected from full range of manufacturer's standard colors.
 - b. Color: _____.
 - c. Color: Specified in Schedule at end of section.
6. Factory install continuous butyl sealant bead inside female seam fold.

G. Trim:

1. Manufacturer's standard sheet metal matching panel material and finish, break-formed to profiles indicated on drawings, including, but not limited to:
 - a. Copings.
 - b. Gravel stops.
 - c. Gutters and downspouts.
 - d. Termination and transition strips.
 2. Color: Match panel finish.
 3. Color: Selected from full range of manufacturer's standard colors.
 4. Color: _____.
 5. Color: Specified in Schedule at end of section.
- H. Clips and Fasteners: Supply items required for installation of panels in accordance with manufacturer's installation instructions and other indicated items; supply galvanized clips and fasteners.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
1. Panel support systems are ready for construction activities of this section and within specified tolerances.
 2. Rough-in utilities are in correct locations.
- B. Installer's Examination:
1. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.
 2. Transmit two copies of installer's report to Architect within 24 hours of receipt.
 3. Beginning construction activities of this section before unacceptable conditions have been corrected is prohibited.
 4. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 INSTALLATION

- A. Install panels plumb, true, and in correct alignment with structural framing, in accordance with shop drawings and manufacturer's printed installation instructions.

- B. Install panels in horizontal installations using manufacturer's concealed fastening system only; sight-exposed fasteners are prohibited.
- C. Install panels in vertical installations using manufacturer's concealed fastening system or non-corroding fasteners color-matched to panel.
- D. Install trim using concealed fasteners where possible; sight-exposed non-corroding fasteners color-matched to trim are permitted on vertical surfaces only.
- E. Installation Tolerances:
 - 1. Variation from Plumb: Maximum 1/8 inch (3 mm).
 - 2. Variation from Level: Maximum 1/8 inch (3 mm).
 - 3. Variation from True Plane: Maximum 1/8 inch (3 mm).
 - 4. Variation from True Position: Maximum 1/4 inch (6 mm).
 - 5. Variation of Member from Plane: Maximum 1/8 inch (3 mm).

3.3 CLEANING

- A. Remove strippable coating and perform dry wipe-down cleaning of panels as erected.

3.4 PROTECTION OF INSTALLED PRODUCTS

- A. Protect installed products from damage by subsequent construction activities.
- B. Replace products having damage other than minor finish damage.
- C. Repair products having minor damage to finish in accordance with panel manufacturer's recommendations.
- D. Architect shall be sole judge of acceptability of repair to damaged finishes; replace products having rejected repairs.

3.5 SCHEDULE

- A. Location:
 - 1. Panel: Type _____; _____ color.
 - 2. Trim: _____ color.

END OF SECTION