

SECTION 07411

METAL ROOF PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Roof Panels.
- B. Trim.

1.2 RELATED SECTIONS

- A. Section 07210 - Roof Insulation.
- B. Section 07620 - Sheet Metal Flashing and Trim.
- C. Section 07720 - Roof Accessories.
- D. Section 07900 - Joint Sealants.

1.3 REFERENCES

- A. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot Dip Process.

1.4 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Vertical loads: Roof panel system to withstand loads imposed by roof panel system, and live loading of ___ pounds per square foot (___ kg/sq m), uniformly distributed.
 - 2. Snow loads: Roof panel system to withstand snow loads in accordance with requirements of local authorities having jurisdiction; imposed snow load is to be added to specified vertical loads when designing roof panel system.
 - 3. Wind uplift: Roofing panel system, including panels, clips, and fasteners to resist wind uplift of ___ psf (___ kPa), as tested by UL.
 - 4. Expansion/Contraction: Roof panel system to include provision for structural and thermal movement without loss of water resistance integrity.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Manufacturer's descriptive literature for roof panel system, including each specified component.
- C. Shop Drawings:
 - 1. Roof plans: Dimensioned drawings indicating the following:
 - a. Layout of roof panels; include fastener locations.
 - b. Locations of trim and other sheet metal items.
 - 2. Details: Dimensioned drawings indicating the following:
 - a. Profile of each type trim and other sheet metal item.
 - b. Interface of roof panel system with adjacent construction.
 - c. Illustration of each type fastener.
- D. Selection Samples: Two sets of color chips representing manufacturer's full range of available colors and finishes.
- E. Verification Samples: Two samples, minimum size 6 inches (152 mm) square, of each selected color and finish, representing actual color and finish of products to be installed.
- F. Quality Assurance Submittals:
 - 1. Design data: Structural design calculations, bearing seal and signature of professional structural engineer licensed to practice in the State in which the project is located.
 - 2. Test reports: Certified reports documenting testing and compliance of roof panel system to specified wind uplift requirements.
 - 3. Certificates:
 - a. Contractor's certification that:
 - 1) Manufacturer of roof panel system meets specified qualifications.
 - 2) Installer of roof panel system meets specified qualifications.
 - b. Manufacturer's certification that installer is approved.
 - 4. Manufacturer's instructions: Printed installation instructions for each roof panel system component, including product storage requirements.

- G. Closeout Submittals: Warranty documents specified in WARRANTY Article of PART 1 of this section.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Minimum three (3) years documented experience producing roof panel systems similar to that specified in this section.
 - 2. Installer: Minimum three (3) years documented experience installing roof panel systems similar to that specified in this section.
- B. Pre-Installation Meetings:
 - 1. Convene at job site seven (7) calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.
 - 2. Require attendance by representatives of the following:
 - a. Installer of this section.
 - b. Other entities directly affecting, or affected by, construction activities of this section.
 - 3. Notify Architect four (4) calendar days in advance of scheduled meeting date.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products of this section in manufacturer's unopened packaging until installation.
- B. Maintain storage area conditions for products of this section in accordance with manufacturer's instructions until installation.

1.8 PROJECT/SITE CONDITIONS

- A. Field Measurements: When construction schedule permits, take field measurements of areas to receive roof panel system; indicate measurements on submitted shop drawings, noting discrepancies.

1.9 WARRANTY

- A. Special Warranty:
 - 1. The Contractor warrants construction activities of this section, as installed, to be in accordance with the Contract Documents and to be free from faults and defects in materials and workmanship for a period of three (3) years.

2. Have warranty countersigned by representatives of manufacturer and installer of this section.
 3. Combine special warranty of this section with construction activities, as installed, of the following sections:
 - a. Section 07210 - Roof Insulation.
 - b. Section 07620 - Sheet Metal Flashing and Trim.
 - c. Section 07720 - Roof Accessories.
 - d. Section 07900 - Joint Sealants.
 4. Have special warranty countersigned by representatives of installers of other sections affected by combined special warranty.
- B. Manufacturer's Warranty: Manufacturer's warranties against defects in products as follows:
1. Failure of roof panel due to rupture, structural failure, or perforation due to exposure to normal atmospheric corrosion: 20 years.
 2. Paint finish: 20 years against blistering, peeling, cracking, flaking, checking, chipping, chalking, or fading.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Metal Sales Manufacturing Corporation; 7800 State Road 60, Sellersburg, IN 47172. ASD. Tel: (812) 246-1935. Fax: (812) 246-0829.
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.

2.2 COMPONENTS

- A. Roof Panels:
1. Acceptable product: Metal Sales Manufacturing Corporation Vertical Seam Roof Panel.
 2. Material: Galvalume(R) aluminum-zinc alloy-coated steel sheet conforming to ASTM A 792/A 792M, Structural Quality (SQ), Grade 50A (345A), Coating Designation AZ55 (AZ 165).
 3. Gage: 22 gage (0.8 mm) minimum sheet thickness.
 4. Gage: 24 gage (0.6 mm) minimum sheet thickness.
 5. Gage: 26 gage (0.4 mm) minimum sheet thickness.
 6. Profile: Factory-formed standing seam pan, with 1-3/4 inch (44 mm) rib having integral male/female

interlocking side seams with continuous factory-applied non-hardening sealant, for mechanical crimping of seams at installation.

7. Panel width: 18 inches (457 mm) coverage.
 8. Panel width: 16 inches (406 mm) coverage.
 9. Panel width: 12 inches (304 mm) coverage.
 10. Panel width: 10 inches (254 mm) coverage.
 11. Finish: Unpainted mill finish.
 12. Finishes:
 - a. Interior face: Factory-applied corrosion-resistant primer.
 - b. Exterior face: Factory-applied Colorfast 25 paint coating, color selected from manufacturer's full range of available colors.
 - c. Exterior face: Factory-applied fluoropolymer paint coating containing KYNAR 500(R) or HYLAR 5000(R) resins, color selected from manufacturer's full range of available colors.
- B. Panel Clips: Manufacturer's standard for roof panel system and specified wind uplift resistance requirements; minimum 18 gage material.
- C. Trim:
1. Trim for indicated project conditions includes both manufacturer's standard trim profiles and site-formed sheet metal items that are not manufacturer's standard trim profiles, and includes, but is not limited to, the following:
 - a. Fascia.
 - b. Closures.
 - c. Panel terminations.
 - d. Perimeter and termination flashings.
 2. Material: Galvalume(R) aluminum-zinc alloy-coated steel sheet conforming to ASTM A 792/A 792M, Commercial Quality (CQ), Coating Designation AZ55 (AZ 165).
 3. Metal thickness: 26 gage (0.4 mm).
 4. Finish: Same as panels.
 5. Finish: Unpainted mill finish.
 6. Finishes:
 - a. Interior face: Factory-applied corrosion-resistant primer.
 - b. Exterior face: Factory-applied Colorfast 25 paint coating, color selected from manufacturer's full range of available colors.

- c. Exterior face: Factory-applied fluoropolymer paint coating containing KYNAR 500(R) or HYLAR 5000(R) resins, color selected from manufacturer's full range of available colors.
- D. Metal Sheet for Shop- or Field-Forming Custom Trim: Same type and finish as panels; obtained from panel manufacturer.
- E. Roof Insulation: Specified in Section 07210.
- F. Roof Accessories: Specified in Section 07720.
- G. Joint Sealants: Specified in Section 07900; type recommended in manufacturer's instructions for indicated use.
- H. Fasteners:
 - 1. For panel clips: Non-corroding fasteners of types specified by roof panel system manufacturer for indicated substrates and specified wind uplift resistance requirements.
 - 2. For metal trim and roof penetration devices: Non-corroding die-cast head steel screws, aluminum-zinc alloy-coated, with weathersealing washers.
- I. Protective Primer: Corrosion-inhibitive primer which prevents electrolytic action between adjacent dissimilar metals, type recommended by roof panel manufacturer.

2.3 FABRICATION

- A. Fabricate indicated site-formed metal items from factory-finished metal sheet to roof panel manufacturer's specifications for factory-formed trim in accordance with shop drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 - 1. Substrate is ready to receive roof panel system.
 - 2. Roof penetrations are completed.
- 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 PREPARATION

- A. Surface Preparation: Apply two (2) coats protective primer to surfaces of trim items that will be concealed in finished Work.

3.3 INSTALLATION

- A. Install roof panel system components in accordance with Architect-accepted shop drawings, manufacturer's instructions, and as follows:
 1. Roof panels: Install in correct alignment with structural framing.
 2. Trim: Install level; lap end joints minimum two (2) inches (50 mm); apply joint sealant to concealed joint surfaces.

3.4 CLEANING

- A. Remove strippable coating from panels, when provided, and perform dry wipe-down cleaning of panels as installed.

3.5 PROTECTION

- A. Protect installed products from damage by subsequent construction activities.
- B. Replace products having damage other than minor finish scratches.
- C. Repair minor finish scratches in accordance with panel manufacturer's recommendations; replace products which cannot be repaired to Architect's acceptance.

END OF SECTION