

SECTION 07411

METAL ROOF PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal Panel Roof System.
- 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 meet requirements of UL Class ___ for indicated exposure.
 - 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. 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, as designed, to requirements of specified wind uplift requirements.
 - 3. Certificates: Contractor's certification that:
 - a. Manufacturer of roof panel system meets specified qualifications.
 - b. Installer of roof panel system meets specified qualifications.
 - 4. Manufacturer's instructions: Printed installation instructions for each roof panel system component, including product storage requirements.
- E. Closeout Submittals: Warranty documents specified in WARRANTY Article of PART 1 of this section.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Minimum ___ years documented experience producing roof panel systems similar to that specified in this section.

2. Installer: Minimum ___ 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. Store products above ground on elevated platforms; incline platforms for moisture run-off.
 2. Ventilate between individual products to prevent moisture condensation build-up.

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 warranty against failure of roof panel due to rupture, structural failure, or perforation due to exposure to normal atmospheric corrosion; warranty period 20 years and 6 months.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. **Acceptable Manufacturers:** One of the following:
 1. _____.
 2. _____.
 3. _____.
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.
- C. **Substitutions:** Not permitted.

2.2 MATERIALS

- A. **Coated Steel Sheet:**
 1. **Acceptable material:** ACRYLUME(R), manufactured by U.S. Steel Group, a unit of USX Corporation; 600 Grant Street, Pittsburgh PA 15219;. ASD. Tel. (412) 433-1121.
 2. **Characteristics:** Aluminum-zinc alloy-coated steel sheet conforming to ASTM A 792/A 792M, Coating Designation AZ55 (AZ 165), Structural Quality (SQ), with clear acrylic coating both faces.

2.3 COMPONENTS

- A. **Roof Panels:**
 1. **Acceptable products:** One of the following:
 - a. _____.
 - b. _____.
 - c. _____.

2. Profiles: Indicated on drawings.
 3. Profile: One of the following:
 - a. _____.
 - b. _____.
 - c. _____.
 4. Material: Coated steel sheet, Grade 33 (230).
 5. Material: Coated steel sheet, Grade 37 (255).
 6. Material: Coated steel sheet, Grade 40 (275).
 7. Material: Coated steel sheet, Grade 50A (345A).
 8. Material: Coated steel sheet, Grade 50B (345B).
 9. Material: Coated steel sheet, Grade 80 (550).
 10. Metal thickness: __ gage (__ mm).
- B. Panel Clips: Manufacturer's standard for roof panel system and specified wind uplift resistance requirements.
- C. Roof Insulation: Specified in Section 07210.
- D. Roof Accessories: Specified in Section 07720.
- E. 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: Coated steel sheet, Grade 33 (230).
 3. Metal thickness: __ gage (__ mm).
- F. Joint Sealants: Specified in Section 07900; type recommended in manufacturer's instructions for indicated use.
- G. 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.

2.4 FABRICATION

- A. Fabricate indicated site-formed metal items to roof panel manufacturer's specifications for factory-formed trim in accordance with Architect-accepted 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 INSTALLATION

- A. Install roof panel system components in accordance with Architect-accepted shop drawings, and manufacturer's instructions.

- B. Installation of roof insulation is specified in Section 07210.

- C. Installation of trim is specified in Section 07620.

- D. Installation of roof accessories is specified in Section 07720.

- E. Installation of joint sealants is specified in Section 07900.

3.3 PROTECTION

- A. Protect installed products from damage by subsequent construction activities.
- B. Replace products having damage which cannot be repaired to Architect's acceptance.

END OF SECTION