

SECTION 07 7600 – METAL ROOFING PANELS

Revised content for Addendum D with red text or ~~strikethrough~~

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Work results specified in this Section includes the following items as indicated:
 - 1. Standing seam concealed fastener site roll formed metal roofing system.
 - 2. Section includes flat insulation and nailbase below the roofing.
 - 3. Section includes related edge and terminal flashings and counter-flashings necessary for a complete weathertight assembly.
- B. Related Sections:
 - 1. Refer to Section 07 0500 SBS Roofing for roof insulation specified in that section.

1.3 SUBMITTALS

- A. Product Data: For roofing panels. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- C. Shop Drawings: Show fabrication and installation details for roof panel assembly. Show layouts of roof and insulation panels including plans and elevations. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Shop Drawings must indicate locations, extent, and type of fasteners and sealants recommended.
- D. Samples: For roofing panels, prepared on metal samples of size to adequately show colors.
- E. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

- A. Performance Requirements: Design and fabricate to resist positive and negative with loads applied to the roofing panels as shown on structural drawings. Design, fabricate and install roofing paneling to accommodate a 200 degree F temperature change of the installed materials.

- B. Installer Qualifications: Installer shall provide documents verifying that the installer has successfully installed a minimum of 2 installations of a similar area within the last 5 years.
- C. Mock-Up: Provide a 100 sf roofing assembly, including a corner, edge flashing, and other features as directed by the Architect for review and evaluation of subsurface preparation and workmanship.
 - 1. Architect shall designate Mock-up area.
 - 2. Rework Mock-up as directed.
 - 3. Successful reworked Mock-up can remain as finished work; protect.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store roof components with labels intact following manufacturer's instructions.
- B. Inspect delivered materials to assure materials are undamaged.

1.6 COORDINATION

- A. Coordinate layout and installation of roofing panel assembly with adjoining construction to provide a leakproof, weathertight, and secure installation.

1.7 WARRANTY

- A. Special Warranty: Installer agrees to repair, refinish or replace roofing assembly components as necessary to stop leakage of water thru the roofing assembly.
- B. Manufacturer's standard form 30-year warranty against coloration of roofing panels and components from color fade, chaulking, and integrity of the finish coating. Manufacturer shall replace all components that show evidence of deterioration of factory-fabricated components and applied finishes within the warranty period.
- C. Roofing Contractor's Guarantee: see attached sample warranty as basis for duration and requirements of guarantees.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design: "Tite-Loc Plus"; Pac-Clad Peterson. Factory prefinished with color as selected by the Architect from the Manufacturer's standard non-premium color selections, with 70% Kyar G-90 galvanized steel 24 gauge site roll formed with 2-inch standing seams; actual thickness of the panels to be determined by performance requirements. Panel width as indicated. Miami-Dade approved for High Wind Application. Include edge and termination metal forms matching color and performance requirements; edge and termination units shall be acceptable to the panel manufacturer and included in the warranty coverage.

4. Comparable products manufacturers include but are not limited to the following:
 - a. "SMI 2.0"; Sheffield Metals International.
 - b. Berridge Manufacturing Co.
 - c. Panel reviewed by the Architect.

2.2 PANELS

- A. Fabricate galvalume steel sheets complying with ASTM A792 and AZ50 to provide 36-inch coverage width; 1.5-inches height.
- F. Coatings: Primer, barrier coat, and 2-coat 70% Kynar 500 resins and clear coat of 70% Kynar resin shall be applied to top surface of panel and other components that will be exposed to view adjacent to the top surface in the finished installation; including exposed surfaces of fasteners. Architect shall select from the complete color range available a single color for the top and a single color for the underside of the panels.
 1. Prime coat the bottom surface of the panel with a universal shop primer.

2.3 ROOF INSULATION

- A. Base: 2-inch thick flat closed-cell polyisocyanurate (polyiso) foam core integrally bonded to non-asphaltic, fiber-reinforced organic felt facers. Basis-of-Design: Atlas Roofing Corporation: "ACFoam II".
 1. ASTM C1289, Type II, Class 1, Grade 2 (20 pounds per square inch) or Grade 3 (25 pounds per square inch) as required by applied loads from construction and or wind.
 2. Insulation must comply with the following criteria:
 1. UL Standard 263 (ASTM E119): Fire Resistance Classification.
 2. UL Standard 1897: Uplift Resistance.
 3. FM Standard 4450 & 4470 Approved: Refer to FM Approvals® RoofNav for Specific Systems Details.
 4. National Building Code: Sections on Foam Insulation.
 5. California State Insulation Quality Standards.
 6. Title 25 Foam Flammability Criteria (T 1231).
 7. Miami-Dade County Product Control Approved.
 8. Product Density (ASTM D1622): Nominal 2.0 pounds per cubic foot (32.04 kg/m³).
 9. Flame Spread (ASTM E84 10 minimum): 40-60.
 10. Smoke Development (ASTM E84 10 minimum): 50-170.
 11. Tensile Strength (ASTM D1623): greater than 730 pounds per square foot (35 kPa).
- B. Nailbase: 20inch thick thermally efficient non-structural composite insulation. Consisting of closed-cell ACFoam®-II or ACFoam®-III polyisocyanurate (polyiso) roof insulation board bonded to Oriented Strand Board (OSB) or CDX Plywood on the top face. Basis-of-Design: Atlas Roofing Corporation: "ACFoam Nail Base- Nailable Roof Insulation".
 1. ASTM C1289, Type V. Compressive Strength (ASTM D1621): 20 pounds per square inch (140 kPa) or 25 pounds per square inch (172 kPa) as required by applied loads from construction and or wind

2. Insulation must comply with the following criteria:
 - a. UL Standard 1256 Classification: Construction No. 120, 123 & 458.
 - b. UL Standard 263 (ASTM E119): Fire Resistance Classification.
 - c. IBC Chapter 26 & National Building Code: Sections on Foam Insulation.
 - d. Miami-Dade County Product Control Approved.
 - e. Product Density (ASTM D1622): Nominal 2.0 pounds per cubic foot (32.04 kg/m³).
 - f. Flame Spread (ASTM E84 10 minimum): 40-60.
 - g. Smoke Development (ASTM E84 10 minimum): 50-170.
 - h. Tensile Strength (ASTM D1623): greater than 730 pounds per square foot (35 kPa).
- C. Fasteners:
 1. Basis-of-Design: Atlas Roofing Corporation: "Atlas Nail Base Fastener": Engineered fastener for nailable insulation to an approved substrate. Required for proper attachment of all ACFoam[®] Nailable insulation products.
 - a. Material: Case hardened and Tempered Carbon Steel
 - b. Head Style/Drive: Pancake Head with T-30 Internal Drive
 - c. Head Diameter: 0.635 inch
 - d. Shank Diameter: 0.190 inch
 - e. Thread Length: 2.750 inch.
 - f. Point: #2 (0.135 inch diameter) Drill Point
 - g. Coating: Epoxy E-Coat (Black).

2.4 EDGE AND TERMINATION METAL

- A. Fabricated by the manufacturer of the roofing panels with the same finish, and in thickness as required by the applied loads, as the roofing panels. Provide clips, anchors, and other attachment components to secure the edges and terminations of the roofing system.

2.5 SEALANTS

- A. Sealants shall be as recommended by the roofing panel manufacturer for each condition where sealants are required. Indicate recommended sealant types and locations on Shop Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of work.
 2. Verify that substrate is sound, smooth, clean, sloped for drainage, and securely anchored and is ready to receive roofing panel assembly.
 3. Verify dimensions of roof areas with reviewed Shop Drawings. Notify Architect for directions if variations of dimensions appear to prohibit a successful installation.
 4. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install roofing panel assembly and related insulation layers according to manufacturer's written instructions and as indicated on reviewed and accepted Shop Drawings; and SMACNA "*Architectural Sheet Metal Manual*" recommendations.
- B. Install specified insulation using approved mechanical fasteners, in accordance with manufacturer's latest written instructions and as required by to resist uplift forces.
- C. Install with end joints staggered to avoid having insulation joints coinciding with joints in deck. In multi-layer installations, stagger joints in top and bottom layers.
- D. Install. Roofing panels, trims, and closures free of bending, waves, buckles, and other visually obvious defects.
 - 1. Locate and install exposed fasteners in uniform vertical and horizontal alignment.
 - 2. Install gaskets and joint sealants where indicated and where required to provide a weather-tight assembly.
- D. Clean roofing as work is installed. Touch up minor abrasions in the finish with air-dried coating that matches color and gloss of factory applied coatings. Protect installed components with covers as recommended by manufacturer. Remove protective films as components are installed.

3.3 PROTECTION

- A. Protect installed roofing from damage during construction. Wash down roofing with mild dish soap and water during final cleaning.

END OF SECTION