

**SECTION 07 32 19**

**METAL TILE PANEL ROOFING**

**PART 1 GENERAL**

1.1 SUMMARY

A. SECTION INCLUDES

1. Metal tile Facsimile roofing panels.
2. Roof flashings, trim and other accessories required to provide a complete and weathertight roofing system.
3. RELATED SECTIONS
  - a) Section 05 12 00 – Structural Steel
  - b) Section 06 11 00 – Wood Framing
  - c) Section 06 15 00 – Wood Decking
  - d) Section 07 62 00 - Sheet Metal Flashing and Trim
  - e) Section 07 72 00 - Roof Accessories
  - f) Section 07 92 00 - Joint Sealants

1.2 REFERENCES

- A. AISI S-100 – North American Specification for the Design of Cold-Formed Steel Structural Members.
- B. ASCE-7: American Society of Civil Engineers -Minimum Design Loads for Buildings and Other Structures; version adopted by local Building Code authority having jurisdiction.
- C. ASTM A792 - Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- D. UL 580 - Tests for Uplift Resistance of Roof Assemblies.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meetings:

1. Schedule meeting to discuss roof project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements before start of work onsite.
2. Required attendees: Contractor, deck & roof installer, and any other subcontractors who have equipment penetrating the roof or work that requires roof access or traffic.

#### 1.4 SUBMITTALS

- A. Product Data: Manufacturer literature indicating product specifications, installation instructions, and standard construction details for specified products.
- B. Shop Drawings: To be prepared by metal roof system manufacturer.
  - 1. Submit roof plan showing roof slope, panel layout, profiles, components, accessories, finish colors, gutters and downspouts as applicable.
    - a) Indicate layout of roofing panels and roof panel sizes, including custom fabricated roofing panels if indicated, indicate each trim condition.
    - b) Include details of each condition of installation, including the locations and types of fasteners, sealants and accessories. Indicate locations, gauges, shapes, and methods of attachment of all panels, accessories and trim.
    - c) Indicate products/materials required for construction activities of this section not supplied by manufacturer of products of this section.
    - d) Indicate locations of field applied sealant.
    - e) Indicate locations of field worked conditions.
- C. Samples:
  - 1. Submit two samples, 12" long, full width panel.
  - 2. Submit color samples for Architect's selection.
  - 3. Submit sample warranties:
    - a) Manufacturer Finish Warranty
    - b) Installer Warranty
- D. Certificates:
  - 1. Submit roof panel manufacturer's certification that fasteners, closures, roof panels and finishes meet the specification requirements.
- E. Qualification Statements: For Manufacturer and Installer.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Manual indicating requirements and recommendations, to maintain the roof system, in good working condition.
- B. Warranty Documentation: Submit final warranties required in this section.

#### 1.6 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Manufacturer Qualifications: Manufacturer shall have a minimum of ten years experience in the manufacturing of metal roof systems similar to those required for this project. Manufacturer must have a current installer training program.
  - 2. Installer Qualifications: Installer ("roofer") to perform the work of this section, shall have no fewer than 5 years of successful experience with the installation of metal roof systems similar to those required for this project.
- B. Field Measurements: Prior to fabrication of panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units, where final dimensions cannot be established prior to fabrication.

#### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements: Deliver panels to jobsite properly packaged to provide protection against transportation damage.
- B. Storage and Handling Requirements:
  - 1. Exercise care in unloading, storing and erecting panels to prevent bending, warping, twisting, and surface damage.
  - 2. Store all material and accessories above ground on well skidded platforms. Store under waterproof covering. Provide proper ventilation to panels to prevent condensation build-up between each panel.
  - 3. Remove from site and replace panels which are damaged, or become water-stained during storage and handling.

#### 1.8 WARRANTIES

- A. Manufacturer Warranties:
  - 1. Panel Coating: Furnish manufacturer's 40-year warranty panel coating warranty covering cracking, checking, and peeling, and 30 year warranty covering fade and chalk.
- B. Installer Warranty: Installer to provide warranty agreeing to repair or replace metal roof panels, trim, or accessories that fails due to poor workmanship or faulty installation.
  - 1. Warranty term: 2 years commencing on date of substantial completion.

### **PART 2 - PRODUCTS**

#### 2.1 ROOF PANEL SYSTEM

- A. Basis of Design: Met-tile by McElroy Metal, Inc. Bossier City, LA, or approved substitute.
- B. Substitution Limitations

1. Requests for approval must be submitted in writing at least ten (10) days prior to bid date, and are accompanied by all related test reports and design calculations listed in section 1.4 and Design and Performance criteria Section 2.2.
2. Substitute manufactures will be approved by written addendum to all bidders. Voluntary alternates will not be considered. Substitutions will not be permitted after the bid date of this project.
3. Roof panels proposed for substitution shall fully comply with specified requirements in appearance, assembly, and performance.

C. Product Options

1. Factory-formed panel profile to simulate clay tiles. Profile shall contain six, 1-1/2" high x 7.2" pitch corrugations for a total coverage of 36". Steps will be 0.7" deep, spaced 12" on center. Each panel to include in its configuration: alignment ridges, accumulation grooves, fastener dimples and sinusoidal end cuts.
2. Panels to be 2'-20' in length in 1' increments.
3. Galvalume coated sheet steel, Type AZ-50, Grade 50 as described in ASTM A792; 26 gauge.
4. Finish: Two coat coil applied, baked-on full-strength (70% resin, PVF2) fluorocarbon coating consisting of a nominal 0.25 mil dry film thickness primer, and a nominal dry film thickness of 0.7 - 0.8 mil color coat for a total 0.9 to 1.1 mil total system dry film thickness. Finish to be selected from manufacturer's standard color selection. The back side of the material should be 0.25 mil primer and 0.25 mil polyester wash coat.
5. Finish shall be stucco embossed.

2.2 ACCESSORIES

- A. Accessories – Provide sheet metal flashings, trim, closure strips, caps, and other preformed metal panel accessories, of same material and finish as panels except as otherwise indicated. Provide molded closure strips of closed cell or solid cell synthetic rubber, neoprene, or polyvinyl chloride, pre-molded or cut to match configuration of roof panels. Provide sealing tape and joint sealant as recommended by manufacturer.
- B. Fasteners – Provide hex head steel fasteners painted to match panels, with sealing washers as recommended by manufacturer.
- C. Concealed supports, angles, plates, accessories and brackets: gauge and finish as recommended, and furnished by manufacturer.
- D. Accessory Screw: Size and screw type as provided by panel manufacturer for each use, with prefinished hex washer head in color to match panels where exposed to view.
- E. Rivets: full stainless steel, including mandrel, in size to match application.
- F. Field Sealant:

1. Exposed Sealant: Color coordinated urethane or polymer sealant as supplied by panel manufacturer.
  2. Non-exposed Sealant: Non-curing, non-skinning, butyl tape or tube sealant as supplied by manufacturer.
- G. Sealant Tape: non-drying, 100 percent solids, high grade butyl tape, as supplied by panel manufacturer, in sizes to match application.
- H. Pipe Penetration Flashings: 20 year warranted flexible boot type, with stainless steel compression ring. Use silicone type at hot pipes.
- I. Underlayment: Install minimum #30 asphalt saturated felt over solid substrate.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Verification of Conditions
1. Ensure surfaces are ready for panel application.
  2. Inspect and ensure surfaces are free from objectionable warp, wave, and buckle before proceeding with installation of pre-formed metal roofing.
  3. Ensure substrate is ready to receive metal roofing. Report items for correction and do not proceed with metal roof panel system installation until resolved.

#### **3.2 PREPARATION**

- A. Install deck, substrate boards, hat channels, purlins, or furring channels in accordance with manufacturer's recommendations.
- B. Coordinate Work, with installation of other associated Work, to ensure quality application.
- C. Coordinate Work with installation of associated metal flashings and building walls.
- D. Coordinate Work to minimize foot traffic and construction activity on installed finished surfaces.
- E. Coordinate location of pipe penetrations to allow centering of pipe in panel.

#### **3.3 INSTALLATION**

- A. Comply with and install roofing and flashings in accordance with all details shown on manufacturer's approved shop drawings and manufacturer's product data, instructions, and installation manuals, within specified erection tolerances.
- B. Do not install panels damaged by shipment or handling.
- C. Allow for required panel clearance at penetrations for thermal movement.

- D. Install concealed supports, angles and brackets as furnished by manufacturer to form complete assemblies.
- E. Remove roof panel and flashing protective film prior to extended exposure to sunlight, heat, and other weather elements.
- F. Field-apply sealant tape and gun-grade sealant according to reviewed shop drawings and manufacturer's requirements for airtight, watertight installation.
- G. Ensure sealant beads and tapes are applied prior to sheet metal installation to achieve a concealed bead. Neatly trim exposed portions of sealant without damaging roof panel or flashing finish.
- H. Install sheet metal flashings according to manufacturer's recommendations, reviewed shop drawings and in accordance with provision of Section 07 62 00.

#### 3.4 CLEANING

- A. Clean exposed surfaces of work promptly after completion of installation.
- B. Clean mud, dirt, and construction-related debris from panels before panels are scratched or marred.

#### 3.5 PROTECTION

- A. Protect Work as required to ensure roofing will be without damage at time of final completion.
- B. Do not allow excessive foot traffic over finished surfaces.
- C. Do not track mud, dirt, or construction-related debris onto panel surfaces.
- D. Replace damaged Work before final completion.

END OF SECTION