

SPECIAL SPECIFICATION

SECTION 07610S

SHEET METAL ROOFING

PART 1 - GENERAL

1.01 **SECTION INCLUDES:** Metal panel system complete with related flashings, closures, trim and accessories, felt underlayment, and clips, anchoring, devices, fasteners, and accessories required for installation of panel system.

1.02 **REFERENCES**

- A. ASTM A 153 - Zinc Coating on Iron or Steel Hardware.
- B. ASTM A 653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. ASTM A 792 - Steel Sheet, Aluminum-Zinc Alloy Coated (Galvanized) by Hot Dip Process.
- D. ASTM B 209 - Aluminum and Aluminum Alloy Sheet and Plate.
- E. ASTM D 226 - Asphalt Saturated Organic Felt Used in Roofing and Waterproofing.
- F. ASTM E 283 - Rate of Air Leakage Through Exterior Windows, Curtainwalls and Doors.
- G. ASTM E 330 - Structural Performance at Exterior Windows, Doors, and Curtainwalls by Uniform Static Pressure Difference.

1.03 **SYSTEM REQUIREMENTS**

- A. Performance Requirements:
 - 1. Air Infiltration: Maximum 0.08-cubic foot per square foot of surface with 4 pounds per square foot air pressure differential when tested in accordance with ASTM E 283.
 - 2. Water resistance: No evidence of uncontrolled leakage at 4 pounds per square foot pressure differential when tested in accordance with ASTM E 331.
 - 3. Uplift resistance: UL Class 90 wind uplift resistance.
 - 4. Design and install system to accommodate thermal expansion, thermal contraction, and building movement.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's technical literature indicating properties of materials, finishes, and performance capabilities.
- B. Shop Drawings: Submit panel layout, dimensions, construction details, flashing details, and methods of anchorage.
- C. Samples:
 - 1. Submit 2-foot by 4-foot section of panel system, complete with flashings and attachment devices.
 - 2. Upon selection of colors by A/E, submit 12-inch by 12-inch finish samples representing color and finish.
- D. Color Charts: Submit samples of manufacturer's full range of standard colors. Submit actual color chips, not photo reproductions.
- E. Qualification Data:
 - 1. Submit installer qualifications verifying years of experience; include list of completed projects having similar scope of work identified by name, location, date, reference name and phone number.
 - 2. Submit letter certifying manufacturer's approval for installation of system.
- F. Manufacturer's Instructions: Submit written installation instructions indicating method and sequence of installation.
- G. Warranty: Submit signed and dated copies of warranties.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Company specializing in installation of metal wall panel systems.
 - 2. Minimum five years documented experience in similar sized installations.
 - 3. Licensed or written approval of system manufacturer.

1.06 WARRANTY

- A. Warrant installed system to be free of leaks and free from defects in materials and workmanship for period of two years from date of Substantial Completion of project.
- B. Warrant factory finish to be free of cracks, splits, crazing, chipping, peeling, and color fading for a period of 20 years from date of Substantial Completion of project.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. AEP Span, Dallas Corp.
- B. Alumax/Howmet, Building Specialties Division.
- C. Berridge Manufacturing Co.
- D. Centria Roof Systems.
- E. Merchant and Evans Industries.
- F. MM Systems Corp.
- G. MBCI.

2.02 STANDING SEAM ROOF PANELS - ACCEPTABLE PRODUCTS

- A. AEP Span, "HS20", 20-inch system.
- B. Alumax, "Snap-on Standing Seam System", 18-inch.
- C. Merchant and Evans, "No. 305 Standing Seam Panel", 16-inch.
- D. Zip Rib Division of Merchant and Evans, "Zip Rib", 16-inch.
- E. MM Systems, "Standing Seam Classic Design Series 145", 14-1/2 inch.

2.03 INTEGRAL RIBBED ROOF PANELS - ACCEPTABLE PRODUCTS

- A. AEP Span, "Square Batten Panel System SB-12", 12-inch.
- B. Alumax, "Decor-Rib", 16-inch.
- C. Merchant and Evans, "No. 118R", 18-inch.
- D. MM Systems, "Rib Gutter Seam, RGS-190", 119-inch.

2.04 SNAP-ON BATTEN ROOF PANELS - ACCEPTABLE PRODUCTS

- A. AEP Span, "Snap-On Batten System, BS16", 16-1/2 inch.
- B. Alumax, "Sup-R-Batten System", 16-inch.
- C. Merchant and Evans, "1-1/2 by 1-1/2 Formed Batten System", 18-inch.
- D. MM Systems, "1 by 1-1/2 Batten Seam, Series 155", 15-1/2 inch.

2.05 MATERIALS AND COMPONENTS

- A. Galvanized Sheet: ASTM A 653, grade A, galvanized sheet steel, G90 zinc coating in accordance with ASTM A 653, smooth embossed finish, minimum 24 gage.
- B. Sealants and Gaskets: Manufacturer's standard type suitable for use with installation of metal roofing; non-staining; skinning, non-shrinking and non-sagging; ultra-violet and ozone resistant for exterior applications; color to match exposed metal.
- C. Fasteners: Manufacturer's standard type to suit applications; with soft neoprene washers; galvanized in accordance with ASTM A 153; finished to match metal panels where exposed.
- D. Powder Actuated Fasteners: Galvanized in accordance with ASTM A 153, with soft neoprene washers, finished to match metal panels where exposed.
- E. Internal and External Corners: Same materials, gage and finish as panels; profile to suit system; brake formed to required angles. Mitered internal corners, back braced with sheet stock, to maintain continuity of profile.
- F. Expansion Joints: Same material and where exposed, finish as panels; manufacturer's standard type, of profile to suit system. Exposed fasteners same finish as panels.
- G. Trim, Closure Pieces, Cap, Infills, Flashings and Accessories: Same material, gage, and where exposed, of same finish as metal panels, brake formed to required profiles.
- H. Underlayment: ASTM D 226, No. 30 unperforated asphalt saturated felt.
- I. Touch-up Paint: As recommended by manufacturer.
- J. Bituminous Paint: Asphaltic type of composition recommended by panel manufacturer.
- K. Ice Guards: Sizes, configuration, and spacing as detailed or as recommended by manufacturer.

2.06 FABRICATION

- A. Uniformly dimensioned, roll formed to exact lengths to avoid field cutting; intermediate horizontal seams not permitted.
- B. Fabrication of component profiles on site not permitted.
- C. Apply finish coatings prior to roll forming.

2.07 FINISH

- A. Fluorocarbon Coating: Factory applied thermo-cured inhibitive primer 0.2 mil dry film thickness, and thermo-cured fluorocarbon coating containing not less than 70 percent Kynar 500 resin, minimum 0.8 mil dry film thickness.
- B. Color: Selected by A/E from full range of manufacturer's standard colors.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine surfaces for conditions that would adversely affect execution. Do not proceed until unsatisfactory conditions are corrected. Beginning of execution will constitute acceptance of existing conditions.
- B. Inspect subroof to verify conditions are acceptable prior to beginning installation. Verify substrate is uniform and even.

3.02 INSTALLATION

- A. Install metal roofing and related components in accordance with manufacturer's printed instructions. Fasten panels with concealed metal clips at each side joint.
- B. Install single layer of underlayment horizontally on surfaces to receive preformed metal roofing. Weather lap edges minimum 6 inches and end laps 12 inches. Stagger vertical joints of each layer and joints of one layer to next. Securely fasten in place.
- C. Install trim, closures, caps and accessories as indicated or required for complete weathertight installation.
- D. Install caps over standing ribs on batten systems.
- E. Protect surfaces in contact with cementitious materials and dissimilar metals with application of bituminous paint. Allow to dry prior to installation.
- F. Permanently fasten system to structure at spacings required by panel manufacturer. Align, level, and plumb, within specified tolerances. Use concealed fasteners unless approved otherwise by A/E. Provide expansion and control joints where indicated.
- G. Seal and place gaskets to prevent weather penetration.
- H. Tolerances:
 - 1. Maximum Offset from True Alignment Between Adjacent Members Butting or In Line: 1/16-inch.
 - 2. Maximum Variation from Plane or Location Indicated on Drawings: 1/8-inch.

- I. Attach ice guards to roof individually in manner capable of resisting sliding forces.

3.03 PROTECTION

- A. Protect system from damage, staining or soiling after installation. Replace components which have been scratched, dented, or otherwise showing signs of damage or improper installation.

END OF SECTION