

(CONTINUED FROM PREVIOUS SHEET)

2.2 ROOFING

- A. Thermoplastic Membrane Roofing: One ply membrane, fully adhered, over insulation.
B. Roofing Assembly Requirements:
1. Roof Covering External Fire-Resistance Classification: UL Class A.
2. Factory Mutual Classification: Class I and windstorm resistance of I-60, in accordance with

FM DS 1-28.

- C. Acceptable Insulation Types - Constant Thickness
1. Minimum 2 layers of polyisocyanurate board.
D. Acceptable Insulation Types - Tapered Application: Any of the types specified.
1. Uniform thickness polyisocyanurate board covered with tapered extruded polystyrene, or perlite board.

2.3 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

- A. Membrane:
1. Material: Thermoplastic polyolefin (TPO) complying with ASTM D 6878.
2. Reinforcing: Internal fabric.
3. Thickness: 0.060 inch, minimum.
4. Sheet Width: Factory fabricated into largest sheets possible.
5. Color: White
6. Cool Roof Rating Council (CRRC) 3 year aged Solar Reflectance Rating of 0.68, or better, and 3 year aged Thermal Emittance Rating of 0.83, or better.
B. Seaming Materials: As recommended by membrane manufacturer.
C. Membrane Bonding Adhesive: As recommended by membrane manufacturer.
D. Flexible Flashing Material: Same material as membrane.

2.4 INSULATION

- A. Perlite Board Insulation: Expanded perlite mineral aggregate, ASTM C 728, with the following characteristics:
1. Tapered Board: Slope as indicated; fabricate of fewest layers possible.
B. Polyisocyanurate Board Insulation: Rigid cellular foam, complying with ASTM C 1289, Type II, Class 1, cellulose felt or glass fiber mat both faces; Grade 1 and with the following characteristics:
1. Compressive Strength: 16 psi
C. Extruded Polystyrene Board Insulation: ASTM C 578, Type X; Extruded expanded polystyrene board with natural skin surfaces; with the following characteristics:
1. Tapered Board: Slope as indicated; minimum thickness 1/2 in; fabricate of fewest layers possible.

2.5 ACCESSORIES

- A. Cant Strips: Wood, pressure preservative treated.
B. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.

PART 3 EXECUTION

3.1 INSTALLATION - GENERAL

- A. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.
B. Do not apply roofing membrane during unsuitable weather.
C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.2 INSULATION - UNDER MEMBRANE

- A. Attachment of Insulation: Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions and Factory Mutual requirements.
B. Lay subsequent layers of insulation with joints staggered minimum 6 inch from joints of preceding layer.
C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
D. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.
E. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
F. Do not apply more insulation than can be covered with membrane in same day.

3.3 MEMBRANE APPLICATION

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
B. Shingle joints on sloped substrate in direction of drainage.
C. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches. Seal permanently waterproof. Apply uniform bead of sealant to joint edge.
D. Bonding Attachment: Apply membrane and bonding adhesiv in accordance with manufacturer's instructions.
E. At intersections with vertical surfaces:
1. Extend membrane over cant strips and over parapet wall.
2. Fully adhere flexible flashing over membrane and up to nailing strips.
F. Around roof penetrations, seal flanges and flashings with flexible flashing.
G. Coordinate installation of roof drains and sumps and related flashings.

3.4 CLEANING

- A. Remove bituminous markings from finished surfaces.
B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
C. Repair or replace defaced or damaged finishes caused by work of this section.

3.5 PROTECTION

- A. Protect installed roofing and flashings from construction operations.
B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 07600 FLASHING AND SHEET METAL

1.1 DESCRIPTION OF WORK:

- A. Work under this Section comprises of the furnishing and installation of metal work and related items specified herein and indicated on drawings.
B. Work includes but is not limited to the following items:
1. Metal flashings and counter flashings.
2. Roof drains, gutters, downspouts, and gravel stops.
3. Fasteners and soldering.
4. Sealant.
5. Pitch pans.
6. Roof expansion joint slip plate.
7. Coping and parapet flashings.

1.2 SUBMITTALS:

- A. Shop Drawings: Indicate material types, sizes, shapes, thicknesses, finishes, fabrication details, anchors, connections, expansion joints and relation to adjacent work. Details and profiles shall be drawn at full size scale.
B. Product Data: Indicate product description, finishes and installation instructions, including interface with adjacent materials and surfaces.

1.3 WARRANTIES:

- A. Warrant flashing and sheet metal work to be free of defects in materials and workmanship in accord with Section 01700. Warranty period shall be 2 years from Date of Substantial Completion.
B. Prefinished Metal: Warrant against fading and peeling for a period of 10 years

1.4 SHEET METAL:

- A. Aluminum:
1. Type: ASTM B209, temper for appropriate end use.
2. Finish: Fluoropolymer (Kynar 500 or equal), color as selected by Architect from manufacturer's full range of standard colors.
or
3. Finish: Factory applied, baked-on enamel coating after metal substrates have been properly cleaned and pretreated. Color shall be selected by Architect from manufacturer's full range of standard colors.
4. Minimum Thickness: 0.040 inches unless noted otherwise.
B. Galvanized Steel:
1. Type: General use complies with ASTM A 525 and Lock_forming ASTM A 527.
2. Minimum Thickness: 24 gauge.
C. MASTIC: Coordinate with approved roofing manufacturer for appropriate mastic materials.
D. SOLDER: ASTM B 32; alloy grade 58, 50% tin, 50% lead.
E. FLUX: Phosphine acid type, manufacturer's standard.

1.5 FASTENERS:

- A. Same material or compatible with sheet metal being fastened.
1. Nails: 3/16" min diameter head, needle point, not less than 12 gauge and of sufficient length to penetrate substrate 1-1/4" minimum.
2. Expansion Shields: Lead or bronze sleeves.
3. Screws: Self-tapping type, with round heads.
4. Bolts: Furnished complete with nuts and washers.
5. Rivets: Round head, solid shank.
6. Blind Clips and Cleats: Same gauge as sheet metal.*
B. Match finish of exposed heads with material being fastened.

1.6 FABRICATION:

- A. General Metal Fabrication:
1. Shop_fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather_resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer's instructions and recommendations. Form exposed sheet metal work without excessive oil canning, buckling and tool marks, true to line and levels as indicated, with exposed edges folded back to form hems.
2. Metal Copings: Comply with SMACNA 4th Edition, Plate 76, with single-lock standing seam joints.
3. Gutters: See drawings for profile.
4. Downspouts: Square profile at locations indicated on the drawings.
B. Provide linear sheet metal items in minimum 10'0" sections except as otherwise noted. Form flashing using single pieces for the full width.

1.7 SCHEDULE:

- 1. Pitch Pans: galvanized steel.
2. Other Sheet Metal (unless noted otherwise): prefinished aluminum.

SECTION 07610 PREFORMED METAL ROOFING

1.1 DESCRIPTION OF WORK

- A. Preformed, prefinished metal roofing and flashings.
B. Miscellaneous trim, flashing, closures, drip flashing, and accessories.
C. Sealant.
D. Fastening devices.
E. The roofing assembly includes preformed sheet metal panels, related accessories, valleys, hips, ridges, eaves, corners, rakes, miscellaneous flashing and attaching devices.

1.2 SUBMITTALS

- A. Submit detailed shop drawings showing layout of panels, anchoring details, joint details, trim, flashing, and accessories. Show details of weatherproofing, terminations, and penetrations of metal work at 0'-3"= 1'-0" scale.
B. Submit a sample of each type of roof panel, complete with factory finish.

1.3 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in Architectural Sheet Metal Products with ten (10) years minimum experience.
B. No product substitutions shall be permitted without meeting specifications.

1.4 WARRANTY

- A. Paint finish shall have a twenty-year warranty against cracking, peeling and fading (not to exceed 5 N.B.S. units).
B. Galvalume material shall have a twenty-year warranty against failure due to corrosion, rupture or perforation.
C. Roofing Installer shall furnish guarantee covering watertightness of the roofing system for the period of two (2) years from the date of substantial completion.
D. When required, Roofing Installer to furnish, Manufacturer's standard watertightness warranty; Roofing Installer to comply with Manufacturer's watertightness warranty program and submit to manufacture all required documents. Watertightness warranty program to include roofing installation inspections which Roofing Installer shall participate.

2.1 ACCEPTABLE MANUFACTURERS

- A. Berridge Manufacturing Company, San Antonio, Texas.
B. Approved Equal - substitutions shall fully comply with specified requirements.

2.2 ACCESSORY MATERIALS

- A. Fasteners: [Galvanized Steel] or [Stainless Steel] with washers at exposed fasteners where approved by architect.
B. Sealant: Sealant shall be an ultra low modulus, high performance, one-part, moisture curing silicone joint sealant. Dow 780 or equal.
C. Sealant must be resistant to environmental conditions such as wind loading, wind driven rain, snow, sleet, acid rain, ozone, ultraviolet light and extreme temperature variations.
D. Features must include joint movement capabilities of +100% & -50% ASTM C-719, capable of taking expansion, compression, transverse and longitudinal movement, service temperature range -65°F to 300°F (-54°C to 149°C), Flow, sag or slump: ASTM C-639; Nil, Hardness (Shore A): ASTM C-661; 15, Tensile strength at maximum elongation: ASTM D-412; 200 psi, Tensile strength at 100% elongation: ASTM D-412; 35 psi, Tear strength, (die °C): ASTM D-624; 40 pli, Peel strength (Aluminum, Glass, Concrete): ASTM C-794; 30 pli
E. Vinyl Weatherseal Insert.

2.3 FABRICATION

- A. All exposed adjacent flashing shall be of the same material and finish as the roof panels.
B. Hem all exposed edges of flashing on underside, 1/2 inch.

2.4 BERRIDGE STANDING SEAM TEE-PANEL

- A. Panels shall have 12 3/4" on-center seam spacing with a seam height of 1" and shall have no exposed fasteners.
B. Panels shall be [site-formed with the Berridge Model SS-14 Portable Roll Former in continuous lengths from eave to ridge] or [factory fabricated to 40' max].
C. Snap-on seams shall be 1" in height and shall contain the Berridge factory-applied Extruded Vinyl Weather Seal Insert (Patent No. 4641475) to prevent siphoning of moisture through the standing seam.
D. Concealed anchor clips shall be spaced as required to meet uplift loads (maximum of 24" on center).
E. When required, Panel assembly shall bear Underwriter's Laboratories Label UL90, pursuant to Construction Number 296 and applicable Fire Ratings.
F. Certification shall be submitted, based on independent testing laboratory, indicating no measurable water penetration or air leakage beyond allowable tolerances through the system when tested in accordance with ASTM E-1680 and E-1646.

3.1 INSTALLATION

- A. Comply with manufacturers standard instructions and conform to standards set forth in the Architectural Sheet Metal Manual published by SMACNA, in order to achieve a watertight installation.
B. Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb.
C. Install starter and edge trim before installing roof panels.
D. Remove protective strippable film prior to installation of roof panels.
E. Attach panels using manufacturer's standard clips and fasteners, spaced in accordance with approved shop drawings.
F. Install sealants for preformed roofing panels as approved on shop drawings.
G. Do not allow panels or trim to come into contact with dissimilar materials.
H. Do not allow traffic on completed roof. If required, provide cushioned walk boards.
I. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.
J. Remove and replace any panels or components which are damaged beyond successful repair.

3.2 CLEANING

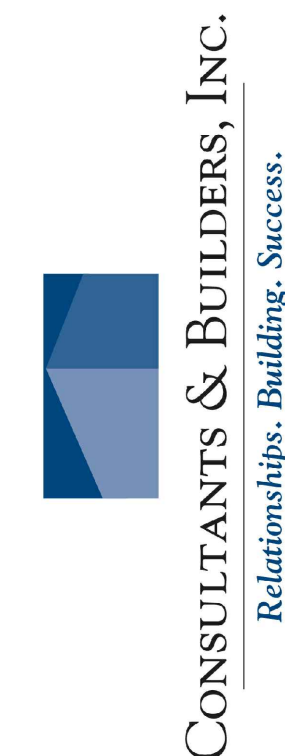
- A. Clean any grease, finger marks or stains from the panels per manufacturer's recommendations.
B. Remove all scrap and construction debris from the site.



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PROJECT:

CONSULTANT:



Relationships. Building. Success.
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Table with 2 columns: DATE, DESCRIPTION

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SHEET TITLE:

ARCHITECTURAL SPECIFICATIONS

SHEET NO.

SPEC-3

Permit Set