SECTION 07 0150

PREPARATION FOR ROOF REPLACEMENT

3/31/2022: This section was re-issued in Addendum 2 to adjust the outline numbering to align with the 3-Part specification format and content revisions. Revised and/or new items are reflected in italicized text.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. *Partial tear-off and Re-cover* of roof system at areas indicated on Drawings.

1.2 RELATED REQUIREMENTS

A. General Conditions, Item 5.17 – Application for and Processing Payment: Pay application process.

B. General Conditions, Item 6.10-11 – Substantial and Final Completion: Closeout procedures.

C. General Conditions, Item 9 – Change Orders: Change order procedures.

D. Section 07 5400 – Thermoplastic Membrane Roofing

1.3 REFERENCE STANDARDS

A. OSSC - Oregon Structural Specialty Code, latest edition.

1.4 DEFINITIONS

A. Full Roof Tear-off: Removal of existing roofing system down to existing composite roof insulation or concrete fill where occurs.

B. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

C. Partial Roof Tear-off: Removal of selected components and accessories from existing roofing system.

D. Roof Re-Cover Preparation: Existing roofing system is to remain and be prepared for new roof installed over it.

1.5 QUALITY ASSURANCE

A. Qualifications

1. Installer Qualifications: Company specializing in performing the work of this section with minimum three years of experience.

B. Pre-Installation Meetings

1. Attendance:

a. Owner

b. Architect

c. General Contractor

d. Roofing installer project manager and crew leader.

e. Roof manufacturer representative.

f. Sheet Metal installer

g. Other subcontractors impacted by the work.

2. Convene one week before starting work of this section.
    a. Note: This meeting can be included with the pre-construction meeting.
3. Review methods and procedures related to roofing tear-off, including, but not limited to, the following:
    a. Reroofing preparation, including roofing system manufacturer's written instructions.
    b. Temporary protection requirements for existing roofing system components that are to remain.
    c. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
    d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.
    e. Existing roof deck conditions requiring Architect notification.
    f. Existing roof deck removal procedures and Owner notifications.
    g. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
    h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
    i. HVAC shutdown and sealing of air intakes.
    j. Asbestos removal and discovery of asbestos-containing materials.
    k. Existing conditions that may require Architect notification before proceeding.

1.6 PROJECT/SITE CONDITIONS

A. Existing Roofing System:
    1. Built-up asphalt roofing.
        a. The existing roofing is a single layer adhered directly to the existing roof deck.
        b. The existing roof assemby was verified at the Pre-Bid meeting on 3/23/2022.

B. Owner will occupy portions of building immediately below reroofing area.
    1. Conduct reroofing so Owner's operations are not disrupted.
    2. Provide Owner with not less than 24 hours written notice of activities that may affect Owner's operations.
    3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
    4. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area.

a. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.

C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

E. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.

1.7 Weather Limitations

A. Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

B. Remove only as much roofing in one day as can be made watertight in the same day.

1.8 Hazardous materials has been identified in the existing roofing system and will be removed by Owner under a separate contract.

A. Hazardous Materials: A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

B. Coordinate reroofing preparation with hazardous material remediation to prevent water from entering existing roofing system or building.

PART 2 PRODUCTS

2.1 Section 07 5400 – Thermoplastic Membrane Roofing for product information.

PART 3 EXECUTION

3.1 PREPARATION

A. Protection of In-Place Conditions:

1. Protect existing roofing system that is not to be reroofed.

2. Limit traffic and material storage to areas of existing roofing that have been protected.

3. Maintain temporary protection and leave in place until replacement roofing has been completed. Remove temporary protection on completion of reroofing.

4. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

B. Protection of openings and air intakes.

1. Seal or isolate windows that may be exposed to airborne substances created in removal of existing materials.

2. Shut off rooftop utilities and service piping before beginning the Work.

3. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work.

a. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.

C. Protection of roof drains.

1. Test existing roof drains to verify that they are not blocked or restricted.

a. Immediately notify Architect of any blockages or restrictions.

2. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.

3. Prevent debris from entering or blocking roof drains and conductors.

a. Use roof-drain plugs specifically designed for this purpose.

b. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

4. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.

a. Do not permit water to enter into or under existing roofing system components that are to remain.

3.2 ROOF TEAR-OFF

A. Lower removed roofing materials to ground and onto lower roof levels, using dust-tight chutes or other acceptable means of removing materials from roof areas.

B. *Partia*l Roof Tear-off

1. Existing roofing to remain, except as listed below

a. Remove roofing on vertical surfaces, including existing curbs and parapet walls.

b. Remove existing cants, except where noted on the Drawings, and roofing above.

c. Remove existing roofing at areas where new framing for cricket will be supported.

d. Removing existing roofing to accommodate other demolition as noted on the Drawings.

3.3 DECK PREPARATION

A. Notify owner or architect when existing deck, parapet sheathing, curbs, blocking, etc. is exposed after tear-off each day and coordination site verification review to confirm extent of materials to be repaired and/or replaced.

1. Repair items as directed by the architect or owner.

2. Deck repair will be paid for by adjusting the Contract Sum according to change procedures included in the Contract Documents.

B. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect.

3.4 INSTALLATION – INFILL MATERIALS

A. Immediately after roof tear-off, and inspection and repair, if needed, of deck, fill in tear-off areas to match existing roofing system construction.

1. Install plywood within voids created by partial removal of existing roofing at horizontal surfaces. Plywood infill thickness to match depth of adjacent existing roofing to remain.

2. Install new roofing patch over roof infill area.

a. If new roofing is installed the same day tear-off is made, roofing patch is not required.

3.5 BASE FLASHING REMOVAL

A. Do not damage metal counterflashings that are to remain.

3.6 DISPOSAL

A. Collect demolished materials and place in containers.

1. Promptly dispose of demolished materials.

2. Do not allow demolished materials to accumulate on-site.

3. Storage or sale of demolished items or materials on-site is not permitted.

B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION

SECTION 07 5400

THERMOPLASTIC MEMBRANE ROOFING

3/31/2022: This section was re-issued in Addendum 2 to adjust the outline numbering to align with the 3-Part specification format and content revisions. Revised and/or new items are reflected in italicized text.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Mechanically attached system with thermoplastic roofing membrane.

B. Roof fire classification.

C. Flashings.

D. Roofing stack boots and walkway pads.

1.2 RELATED REQUIREMENTS

A. General Conditions, Item 5.17 – Application for and Processing Payment: Pay application process.

B. General Conditions, Item 4.1 – Materials to be Reviewed Before Use: Submittal review procedures, substitution request procedures.

C. General Conditions, Item 6.10-11 – Substantial and Final Completion: Closeout procedures.

D. General Conditions, Item 9 – Change Orders: Change order procedures.

E. Section 01 6023 – Substitution Request Form: Product substitution approval process during bid period.

F. Section 07 0150 – Preparation for Roof Replacement: Existing roof tear off.

G. Section 07 6200 - Sheet Metal Flashing and Trim: Counterflashings, reglets.

H. Section 07 9200 - Joint Sealers.

1.3 REFERENCE STANDARDS

A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2014.

B. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.

C. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing; 2013.

D. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces; 2011.

E. FM DS 1-28 - Wind Design; Factory Mutual Research Corporation; 2007.

F. NRCA ML104 - The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association; Fifth Edition, with interim updates.

G. OSSC - Oregon Structural Specialty Code, latest edition.

H. UL (RMSD) - Roofing Materials and Systems Directory; Underwriters Laboratories Inc.; current edition.

1.4 SYSTEM DESCRIPTION

A. Roofing Assembly Requirements

1. Solar Reflectance Index (SRI)

a. 78, minimum, calculated in accordance with ASTM E1980.

b. Field applied coating may not be used to achieve specified SRI.

2. Roof Covering External Fire-Resistance Classification per Table 1505.1 of the building code.

a. Class C.

1.5 SUBMITTALS

A. See General Conditions, Item 4.1 Materials to be Reviewed Before Use for submittal procedures.

B. Product Data

1. Submit manufacturer's product data and installation instructions.

2. Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, fasteners, and accessories.

3. Specimen Warranty: For approval.

C. Shop Drawings

1. Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, and mechanical fastener layout.

D. Quality Assurance Submittals

1. Certificates

a. Demonstrate installer meets or exceeds the standards of this section.

E. Manufacturer’s Instructions

1. Manufacturer's Installation Instructions: Indicate membrane seaming precautions, special procedures, and perimeter conditions requiring special attention.

F. Closeout Submittals

1. Warranty:

a. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

b. Submit installer's certification that installation complies with all warranty conditions for the waterproof membrane.

1.6 QUALITY ASSURANCE

A. Quality Standards

1. Perform work in accordance with NRCA Roofing and Waterproofing Manual.

B. Qualifications

1. Installer Qualifications

a. Company specializing in performing the work of this section with minimum five years of experience.

b. Approved by membrane manufacturer.

c. Provide adequate number of experienced workers regularly engaged in this type of work who are skilled in the application techniques of the material specified. Provide at least one thoroughly factory trained and experienced subcontractor's foreman on the job at all times that roofing work is in progress.

2. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

C. Pre-Installation Meetings

1. Convene one week before starting work of this section.

2. Review special conditions of the project, preparation and installation procedures and coordinating and scheduling required with related work.

3. Minimum attendance

a. General Contractor Superintendent, Roofing Contractor Foreman, Roofing Manufacturer's Technical Representative, Sheet Metal Contractor's Foreman, Owner, Architect.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Acceptance at Site

1. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Storage

1. Store products in weather protected environment, clear of ground and moisture.

2. Protect foam insulation from direct exposure to sunlight.

1.8 WARRANTY

A. See General Conditions, Item 4/13 – Guarantee for additional warranty requirements.

1. System Warranty: Provide manufacturer's total system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind or other natural causes.

2. Warranty Term: 20 years.

3. For repair and replacement include costs of both material and labor in warranty.

4. Warranty should be from the manufacturer of the membrane, not the marketer.

5. Warranty should include the membrane, plates, fasteners, insulation, recover board, and other accessories specified in this Section.

PART 2 PRODUCTS

2.1 PRODUCT GENERAL REQUIREMENTS

A. System Description

1. One ply roofing membrane; mechanically fastened.
2. Coverboard to separate *new membrane from existing roofing to remain and new vapor installed in isolated locations*.
3. *Existing roofing to remain, excepted as described in Section 07 0150 – Preparation for Roof Replacement and the Drawings.*
4. *Existing roof deck which includes ½" plywood over 2x6 T&G wood decking over existing wood purlins.*

2.2 THERMOPLASTIC MEMBRANE ROOFING AND ASSOCIATED MATERIALS

A. Manufacturer – Basis of Design
   1. Carlisle Syntec Systems

B. Other Acceptable Manufacturers
   1. Firestone Building Products, LLC.
   2. GAF.
   3. GenFlex Roofing Systems, LLC.
   4. IB Roofing
   5. Johns-Manville
   6. Substitutions: See General Conditions Item 4.1 – Materials to be Reviewed Before Use and Section 01 6023 – Substitution Request Form for substitution requirements.

C. Membrane
   1. Product – Basis of Design
      a. "Sure-Weld TPO".
   2. Material:
      a. Thermoplastic polyolefin (TPO) complying with ASTM D 6878.
   3. Reinforcing:
      a. Internal reinforcing scrim.
   4. Thickness, Min.
      a. 60 mils – See Base Bid and Alternates.
      b. 80 mils. – See Base Bid and Alternates.
      c. Sheet Width. Factory fabricated into largest sheets possible.
   5. Color
      a. White.

D. Seaming and Flashing Materials
   1. As recommended by membrane manufacturer.

E. Base Flashing

1. Provide a waterproof, fully adhered base flashing system at all penetrations, plane transitions and terminations.

F. Vapor Retarder

1. Product – Basis of Design

a. "SureMB 70 SA Base Ply" by Carlisle.

b. Self-adhered membrane.

2. Product to be a temporary roof and vapor barrier below membrane complying with requirements of fire rating classification; compatible with roofing and insulation materials.

3. Use adhesives required by the manufacture to meet specified fire classification.

4. Extent: Where "Vapor Barrier" noted on the Drawings at areas where existing roofing is removed from horizontal surfaces.

G. Flexible Flashing Material

1. Same material as membrane.

H. Edging and Terminations

1. As recommended by membrane manufacturer.

2.3 SEPARATION LAYER

A. Purpose

1. As necessary to meet specified UL roof classification.

B. Manufacturer

1. Approved by membrane manufacturer for conditions of use.

C. Products, Contractor's Choice

1. "InsulBase HD Polyiso" cover board by Carlisle Syntex Systems; 1/2 in.

a. Application: Slopes up to 2:12

2. "DensDeck" Glass-Mat sheathing by Georgia Pacific; 1/4 in.

a. Application: At roof slopes greater than 2:12.

2.4 ACCESSORIES

A. Stack Boots

1. Prefabricated flexible boot and collar for pipe stacks through membrane; curb inside and outside corners, pitch pockets, curb wraps, same material as membrane.

B. Roof Board Fasteners

1. Appropriate for purpose intended and approved by roofing manufacturer.

2. Length as required for thickness of roof board material and penetration of deck substrate, with metal washers.

C. Air and Vapor Barrier Adhesive

1. Primer recommended by membrane manufacturer.

D. Membrane Adhesive

1. Adhesive recommended by membrane manufacturer.

E. Sealants

1. As recommended by membrane manufacturer.

F. Walkway Pads

1. Membrane manufacturer’s standard size and type, serrated or cross hatched.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and nailing strips, and reglets are in place.

F. Verify existing roofing to remain is secured in place. Remove loose edges, bubbles, and other areas that aren’t fully secured to the existing roof deck.

3.2 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.

F. Coordinate the work with installation of associated counterflashings installed by other sections as the work of this section proceeds.

3.3 INSTALLATION – VAPOR BARRIER

A. Apply vapor barrier to new plywood in voids in horizontal surfaces where existing roofing is removed.

B. Apply vapor *barrier* to surfaces with adhesive in accordance with manufacturer's instructions.

C. Extend vapor *barrier* and terminate with flexible flashing to parapet wall system over insulation or coverboard layer as required by membrane manufacturer to allow for adequate adherence of membrane to substrate.

D. Ensure vapor *barrier* is clean and dry, continuous, and ready for application of insulation or coverboard.

E. Separate vapor barrier from membrane as required by the manufacturer.

3.4 INSTALLATION - MEMBRANE

A. Apply separate layer below roofing membrane.

B. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

C. Shingle joints on sloped substrate in direction of drainage.

D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches. Seal permanently waterproof. Apply uniform bead of sealant to joint edge.

E. Mechanical Attachment

1. Apply membrane and mechanical attachment devices in accordance with manufacturer's instructions.

F. Around roof penetrations, seal flanges and flashings with flexible flashing.

G. Coordinate installation of roof drains and sumps and related flashings.

H. Wood Nailers.

1. Perimeter of roof area.
2. Around projections and penetrations.
3. Other locations where required to meet roof membrane manufacturer's guarantee requirements.
4. Securely anchor to deck to resist minimum force required by manufacturer.

3.5 INSTALLATION - WALKWAY

A. Do not install over flashings or field seams until field inspection has been completed.

B. Install roof walkway pad at:

1. At and between HVAC units.
2. *Below HVAC units installed on skids.*
3. At roof access point.
4. Under downspout splash pans.
5. And elsewhere as shown on the Drawings.

3.6 FIELD QUALITY CONTROL

A. Daily Seals

1. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.

2. Complete an acceptable membrane seal in accordance with the manufacturer's requirements.

B. Manufacturer’s Field Service

1. Upon completion of the installation, the manufacturer's representative shall make an inspection to ascertain that the roofing membrane system has been installed according to manufacturer's approved specifications and details. The inspection shall determine if any corrective work will be required before the warranty will be issued.

2. Notify the architect 72 hours prior to manufacturer's representative visits.

3.7 CLEANING

A. Remove 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.

D. Prior to substantial completion broom clean entire roof surface to remove any and all accumulated dirt, construction debris, screws, nails, sheet metal snips, garbage, rags, buckets, tools, roofing scraps, etc. Assure all roof drains and scuppers are clean and free draining.

3.8 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 07 6000

SHEET METAL

3/31/2022: This section was re-issued in Addendum 2 to adjust the outline numbering to align with the 3-Part specification format. No changes have been made to the content.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counterflashings, gutters, downspouts, and other items indicated in Schedule.

B. Sealants for joints within sheet metal fabrications.

C. Removing and replacing existing flashing to facilitate reroofing work.

1.2 RELATED REQUIREMENTS

A. General Conditions, Item 5.17 – Application for and Processing Payment: Pay application process.

B. General Conditions, Item 4.1 – Materials to be Reviewed Before Use: Submittal review procedures, substitution request procedures.

C. General Conditions, Item 6.10-11 – Substantial and Final Completion: Closeout procedures.

D. General Conditions, Item 9 – Change Orders: Change order procedures.

E. Section 01 6023 – Substitution Request Form: Product substitution approval process during bid period.

F. Section 07 0150 – Preparation for Roof Replacement: Existing roof tear off.

G. Section 07 5400 - Thermoplastic Membrane Roofing: Flashings associated with roofing system.

H. Section 07 9005 - Joint Sealers.

1.3 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2013.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

C. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.

E. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.

F. ASTM D4479/D4479M - Standard Specification for Asphalt Roof Coatings - Asbestos-Free; 2007 (Reapproved 2012).

G. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012).

H. CDA A4050 - Copper in Architecture - Handbook; latest edition.

I. SMACNA (ASMM) - Architectural Sheet Metal Manual; latest edition.

J. OSSC - Oregon Structural Specialty Code, latest edition.

1.4 SUBMITTALS

A. See General Conditions, Item 4.1 Materials to be Reviewed Before Use for submittal procedures.

B. Shop Drawings

1. Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

C. Samples

1. Purpose: Color selection.

2. Quantity: (2)

3. Size: Manufacturer's standard sample size.

1.5 QUALITY ASSURANCE

A. Quality Standards

1. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

B. Qualifications

1. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years of experience.

C. Pre-Installation Meetings

1. Convene one week prior to installation of flashing components.

2. Attendance to include sheet metal fabricator, sheet metal installers, General Contractor, Owner, and Architect.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Acceptance at Site

1. Deliver materials in original packages, containers or bundles bearing name and identification of supplier.

B. Storage

1. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

2. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.1 SHEET MATERIALS

A. Galvanized Steel

1. ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage, (0.0239 inch) thick base metal.

B. Pre-Finished Galvanized Steel

1. ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage, (0.0239) inch thick base metal, shop pre-coated with PVDF coating.
2. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
3. Color: As scheduled.

C. Stainless Steel

1. ASTM A666 Type 304, soft temper, minimum 0.015 inch (26 ga) thick; smooth No. 4 finish. Fully annealed.

2.2 ACCESSORIES

A. Fasteners

1. Stainless steel, with soft neoprene washers.

B. Underlayment

1. Organic roofing felt, Type I ("No. 15").

C. Slip Sheet

1. Rosin sized building paper.

D. Primer

1. Zinc chromate type.

E. Protective Backing Paint

1. Asphaltic mastic, ASTM D4479 Type I.

F. Sealant to be Concealed in Completed Work

1. Non-curing butyl sealant.

G. Sealant to be Exposed in Completed Work

1. Elastomeric sealant, 100 percent silicone with minimum movement capability of plus/minus 25 percent and recommended by manufacturer for substrates to be sealed; clear.

H. Sealant – Other

1. Type as specified in Section 07 9005.

I. Plastic Cement

1. Type I.

J. Solder

1. Sn50 (50/50) type.

K. Flux

1. Rosin, cut Muriatic Acid, or commercial preparation suitable for use.

L. Strainers

1. Same material as gutter. Provide within gutter at each downspout.

2.3 FABRICATION – GENERAL

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Fabricate cleats of same material as sheet, minimum 2 in. wide, interlocking with sheet.

C. Form pieces in longest possible lengths.

D. Hem exposed edges on underside 1/2 in.; miter and seam corners.

E. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

F. Fabricate corners from one piece with minimum 18 in. long legs; seam for rigidity, seal with sealant.

G. Fabricate vertical faces with bottom edge formed outward 1/4 in. and hemmed to form drip.

PART 3 EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions

1. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

2. Verify roofing termination and base flashings are in place, sealed, and secure.

3. Verify that nailers and blocking are properly installed.

3.2 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION – GENERAL

A. Conform to drawing details.

B. Install Work watertight, without waves, warps, buckles, tool marks, fastening stresses, distortion, or defects which impair strength of mar appearance.

C. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

D. Apply plastic cement compound between metal flashings and felt flashings.

E. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

F. Seal metal joints watertight.

G. Install planes and lines in true alignment. Allow for sheet metal expansion and contraction.

H. Secure elements in place using fasteners.

3.4 INSTALLATION – COPINGS

A. Install copings with continuous cleat on the exterior side, fastened at 16 inches on center. Use exposed fasteners with neoprene washers through elongated holes on the roof side, at 24 inches on center.

3.5 SCHEDULES

A. Gutters

1. Precoated steel, 24 gage.

B. Gutter Straps

1. Match gutter material, 14 gage.

C. Downspout

1. Pipe as specified

2. Precoated steel, 22 gage.

D. Coping, Cap, Parapet, and Ledge Flashings

1. 24 gage precoated galvanized steel, unless otherwise indicated.

E. Window and Door Openings

1. 24 ga pre-coated sheet metal

F. Flashings Associated with Shingle Roofing, including Valley, Hip, Ridge, Eave, Gutter Edge, Gable Edge.

1. 24 ga pre-coated sheet metal

G. Roofing Penetration Flashings, for Pipes, Structural Steel, and Equipment Supports.

1. 24 gage galvanized steel, unless otherwise indicated.

H. Masonry Through-Wall Flashing

1. 24 gage stainless steel, in addition to plastic type specified in Division 4.

I. Coping, Cap, Parapet, and Ledge Flashings

1. 24 gage precoated galvanized steel, unless otherwise indicated.

J. Counterflashings at Curb-Mounted Roof Items, including skylights and roof hatches, roofing Penetration Flashings, for Pipes, Structural Steel, and Equipment Supports.

1. 24 gage galvanized steel, unless otherwise indicated.

K. Other flashings as shown on Drawings.

END OF SECTION

SECTION 07 9200

JOINT SEALANT

3/31/2022: This section was re-issued in Addendum 2 to adjust the outline numbering to align with the 3-Part specification format. No changes have been made to the content.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Sealant

B. Joint backing

1.2 RELATED REQUIREMENTS

A. General Conditions, Item 5.17 – Application for and Processing Payment: Pay application process.

B. General Conditions, Item 4.1 – Materials to be Reviewed Before Use: Submittal review procedures, substitution request procedures.

C. General Conditions, Item 6.10-11 – Substantial and Final Completion: Closeout procedures.

D. Section 01 6023 – Substitution Request Form: Product substitution approval process during bid period.

E. Section 07 7540 – Thermoplastic Membrane Roofing: Sealants required in conjunction with roof membrane components.

F. Section 07 6000 – Sheet Metal: Sealants required in conjunction with roof membrane components.

1.3 REFERENCE STANDARDS

A. ASTM C834 - Standard Specification for Latex Sealants; 2010.

B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.

C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.

D. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.4 SUBMITTALS

A. See General Conditions, Item 4.1 Materials to be Reviewed Before Use for submittal procedures.

B. Product Data

1. Submit manufacturer's product data and installation instructions.

1.5 QUALITY ASSURANCE

A. Quality Standards

1. Types

a. Type S – Single Component.

b. Type M – Multi-Component.

2. Grades

a. Grade P – Pourable (self-leveling).

b. Grade NS – Nosag.

3. Classes

a. Amount listed is percentage relative to original joint width.

4. Uses

a. Use T – Traffic.

b. Use NT – Nontraffic.

c. Use I – Immersible.

d. Use M – in contact with mortar.

e. Use G – in contact with glass.

f. Use A – in contact with aluminum.

g. Use 0 – in contact with other materials than listed above.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Storage

1. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes.

1.7 PROJECT/SITE CONDITIONS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. BASF Construction Chemicals-Building Systems.

B. Bostik Inc.

C. Dow Corning Corporation.

D. Momentive Performance Materials, Inc (formerly GE Silicones).

E. Pecora Corporation.

F. Tremco Global Sealants.

G. Substitutions: See General Conditions Item 4.1 – Materials to be Reviewed Before Use and Section 01 6023 – Substitution Request Form for substitution requirements. Products listed below are one acceptable product. Other products from the manufacturers listed above meeting the requirements below are acceptable.

2.2 SEALANTS

A. General

1. Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
2. Color: To be selected by Architect from manufacturer's standard range.

B. General Purpose Exterior Sealant

1. Description
    a. Polyurethane; ASTM C920, Grade NS, Class 25 minimum; Uses M, G, and A; single component.
2. Product
    a. “NP2” by Soneborn.
3. Applications: Use for:
    a. Control, expansion, and soft joints in masonry.
    b. Joints between concrete and other materials.
    c. Joints between metal frames and other materials.
    d. Other exterior joints for which no other sealant is indicated.

2.3 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

E. Masonry Sand: Mason's Sand and Silica Mix for use over still wet sealant at all masonry control or expansion joints. Sand to closely match color and texture of mortar joints.

PART 3 EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions

1. Verify that substrate surfaces are ready to receive work.
2. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Protect elements surrounding the work of this section from damage or disfigurement.

3.3 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave. Remove and replace sealant in joints improperly tooled.

H. Spread Mason's Sand and Silica Mix over still wet sealant at all control joints in masonry walls.

3.4 CLEANING

A. Clean adjacent soiled surfaces.

3.5 PROTECTION

A. Protect sealants until cured.

END OF SECTION