

SECTION 07015 – REPAIRS TO EXISTING ROOFING SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes repairs to existing thermoplastic polyolefin membrane (TPO) roofing system.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain components including adhesive and flashing for membrane roofing system compatible with existing roofing system.
- B. Preinstallation Roofing Conference: Conduct conference at Project site prior to starting repairs if so directed by Architect.

1.4 PROJECT CONDITIONS

- A. Protect building to be re-roofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from re-roofing operations.
- B. Limit construction loads on roof to load requirements of existing roofing system.

PART 2 - PRODUCTS

2.1 ROOFING REPAIR SYSTEM

- A. Provide roofing repair system to match existing roofing system type, thickness, and fire-resistance rating.

2.2 AUXILIARY MEMBRANE ROOFING MATERIALS

- A. General: Provide sheet flashing, bonding adhesive, fasteners, insulation, and other auxiliary roofing materials and accessories required compatible with existing roofing system.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect existing roofing system that is indicated not to be repaired.

- B. Cover air intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

3.2 DISPOSAL

- A. Collect and place demolished materials in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION 07015

Copyright: ARCONS Design Studio, PC

Issue Date: 10/2/18

SECTION 07720 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Roof curbs.
 - 2. Equipment supports.

1.3 SUBMITTALS

- A. Samples: For each exposed finish

1.4 QUALITY ASSURANCE

- A. Standards: Comply with the following
 - 1. SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.
 - 2. NRCA's "Roofing and Waterproofing Manual" details for installing units.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Galvanized Steel Sheet: ASTM A 653/A 653M with G90; commercial steel, unless otherwise indicated.
 - 1. Structural Quality: Grade 40, where indicated or as required for strength.
- B. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, with Class AZ-50 coating, structural quality, Grade 40, or as required for strength.
- C. Insulation: Manufacturer's standard rigid or semi-rigid glass-fiber board of thickness indicated.
- D. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for above ground use, complying with AWPA C2; not less than 1-1/2 inches thick.

- E. Fasteners: Same metal as metals being fastened, or non-magnetic stainless steel or other non-corrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.
 - 1. Provide non-removable fastener heads where removal of exterior exposed fasteners affords access to building.
- F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.
- G. Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coating.
- H. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
- I. Elastomeric Sealant: Recommended by unit manufacturer that is compatible with joint surfaces; ASTM C 920, Type S, Grade NS, Class 25.
- J. Roofing Cement: ASTM D 4586, non-asbestos, fibrated asphalt cement designed for trowel application or other adhesive compatible with roofing system.

2.2 ROOF CURBS AND EQUIPMENT SUPPORTS

- A. General: Units capable of supporting superimposed live and dead loads, including equipment loads and other construction to be supported. Coordinate dimensions with equipment to be supported.
 - 1. Provide preservative-treated wood nailers at tops of units and formed flange at perimeter bottom for mounting to roof.
 - 2. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
 - 3. Fabricate units to minimum height of 8 inches, unless otherwise indicated.
 - 4. Where slope of roof deck exceeds $\frac{1}{4}$ inch per foot, fabricate support units with height tapered to match slope to level tops of units.
- B. Roof Curbs:
 - 1. Fabrication: Unless otherwise indicated or required for strength, fabricate units from minimum 0.0747-inch thick, structural quality, hot-dip galvanized or aluminum-zinc alloy-coated steel sheet; factory primed and prepared for painting with welded or sealed mechanical corner joints.
 - 2. Installation: Manufacturer's standard rigid or semi-rigid insulation where indicated.
 - 3. Cants: Formed cants and base profile coordinated with roof insulation thickness.

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 the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.

- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction to ensure that combined elements are waterproof and weather-tight. Anchor roof accessories securely to supporting structural substrates so they are capable of withstanding lateral and thermal stresses, and inward and outward loading pressures.
- B. Install roof accessory items according to construction details in NRCA's "Roofing and Waterproofing Manual," unless otherwise indicated.
- C. Separation: Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent serration.
- D. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form seal.
- E. Cap Flashing: Where required as component of accessory, install cap flashing to provide waterproof overlap with roofing or roof flashing (as counter flashing). Seal overlap with thick bead of mastic sealant.
- F. Operational Units: Test-operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.
- G. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION 07720

Copyright: ARCONS Design Studio, PC

Issue Date: 10/2/18

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes joint sealants for the following:
 - 1. Exterior joints in vertical surfaces and horizontal non-traffic horizontal surfaces.
 - 2. Exterior joints in horizontal traffic surfaces.
 - 3. Interior joints in vertical surfaces and horizontal non-traffic surfaces.
 - 4. Interior joints in horizontal traffic surfaces.

1.3 SUBMITTALS

- A. Sealant compatibility and adhesion test reports.
- B. Reconstruction field-adhesion test reports

1.4 QUALITY ASSURANCE

- A. Sealant Compatibility and Adhesion Testing: Use sealant manufacturer's standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
- B. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to joint substrates according to the method indicated in Part 3 "Field Quality Control" Article.

1.5 WARRANTY

- A. Special Installer's Warranty: Written warranty in which Installer agrees to repair or replace elastomeric joint sealants that do not meet requirements specified in this Section or fail in adhesion within specified warranty period two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with requirements specified in this Section within 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Contract Administrator from Manufacturer's full range.

2.2 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants, General: ASTM C 920.
 - 1. Continuous-Immersion Sealants: For immersion in water, products tested according to ASTM C 1247, including initial six-week immersion period and one additional immersion four-week immersion(s), without failing in adhesion or cohesion when tested with substrates indicated.
 - 2. Sealants for Contact with Food: Comply with 21 CFR 177.2600.
- B. Mildew-Resistant Silicone Sealant (ES#1):
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. Dow Corning: 786 Mildew Resistant.
 - b. GE Silicones: Sanitary 1700
 - 2. Type and Grade: S (single component) and NS (non-sag).
 - 3. Class: 25
 - 4. Exposure: Use NT (non-traffic)
 - 5. Substrates: Uses G, A, and O, as applicable to joint substrates indicated.
- C. Pourable Silicone Sealant (ES#2):
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. Dow Corning: 890-SL
 - 2. Type and Grade: S (single component) and P (pourable).
 - 3. Class: 25
 - 4. Additional Movement Capability: 100 percent movement in extension and 50 percent in compression when tested for adhesion and cohesion under maximum cyclic movement per ASTM C719.
 - 5. Exposure: Use T (traffic).
 - 6. Substrates: M and, as applicable to joint substrates indicated, O.
- D. Multi-component Non-sag Urethane Sealant (ES#3):
 - 1. For joints not subject to traffic and requiring additional movement capability, provide the following:
 - a. Products:
 - 1) Pecora Corporation: Dynatrol II
 - 2) Sika Corporation: Sikaflex-2c NS
 - 3) BASF Corp. Building Systems: Sonneborn Sonolastic NP2
 - b. Type and Grade: M (multi-component) and NS (non-sag).
 - c. Class: 25.

- d. Additional Movement Capability: 50 percent movement in extension and 50 percent in compression when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719
 - e. Exposure: Use NT (non-traffic)
 - f. Substrates: M, G, A, and as applicable to joint substrates indicated, O.
2. For joints subject to traffic (ES#4), provide the following:
- a. Products
 - 1) Pecora Corporation: Dynatred
 - b. Type and Grade: M (multi-component) and NS (non-sag)
 - c. Class: 25
 - d. Exposure: Use T (traffic)
 - e. Substrates: Uses M, A, and as applicable to joint substrates indicated, O.

2.3 LATEX JOINT SEALANTS

A. Latex Sealant: ASTM C 834 (LS#5)

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Pecora Corporation: AC-20
 - b. BASF Corp. Building Systems: Sonneborn Sonolac.
 - c. Tremco: Tremflex 834

2.4 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to produce optimum sealant performance:
 1. Type C (closed-cell material with a surface skin) O (open-cell material).
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Surface cleaning of Joints: Clean out joints immediately before installing joint sealants.
1. Remove foreign material from joint substrates that could interfere with adhesion of joint sealant.
 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
 3. Remove laitance and form-release agents from concrete.
 4. Clean non-porous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues could interfere with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.
- D. Sealant Installation: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- E. Install sealant backings to support sealants during application and at position required to produce optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- F. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- G. Place sealants so they directly contact and fully wet joint substrates.
1. Completely fill recesses provided for each joint configuration.
 2. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- H. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Joint Configuration: Concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

- I. Clean off excess sealant or sealant smears adjacent to joints as installation progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.2 JOINT-SEALANT SCHEDULE

- A. Exterior joints in the following vertical surfaces and non-traffic horizontal surfaces.
 1. Control and Expansion Joints in Cast-in-Place Concrete: ES#3 sealant.
 2. Joints between Architectural Pre-cast Concrete Units: ES#3 sealant.
 3. Control and Expansion Joints in Unit Masonry: ES#3 sealant.
 4. Joints in Exterior Insulation and Finish Systems: As provided by manufacturer.
 5. Joints between Metal Panels: ES#3 sealant
 6. Joints between Different Materials Listed above: ES#3 sealant
 7. Perimeter Joints between Materials Listed above and Frames of Doors and Windows: ES#3 sealant.
 8. Control and Expansion Joints in Ceiling and Overhead Surfaces: ES#3 sealant.
- B. Exterior joints in the following horizontal traffic surfaces:
 1. Control, Expansion, and Isolation Joints in Cast-in-Place Concrete Slabs: ES#2 sealant.
 2. Joints between Different Materials Listed above: ES#2 sealant
 3. Other exterior horizontal traffic surfaces as directed by Contract Administration: ES#2 sealant.
- C. Interior joints in the following vertical surfaces and horizontal non-traffic surfaces:
 1. Control and Expansion Joints on Exposed Interior Surfaces of Exterior Walls: ES#4 sealant.
 2. Perimeter Joints of Exterior Openings Where Indicated: ES#4 sealant.
 3. Tile Control and Expansion Joints: ES#1 sealant
 4. Vertical Control Joints on Exposed Surfaces of interior Unit Masonry and Concrete Walls and Partitions: ES#4 sealant.
 5. Perimeter Joints between Interior Wall Surfaces and Frames of Interior Doors, Windows, and Elevator Entrances: LS#5 sealant.
 6. Joints between Plumbing Fixtures and Adjoining Walls, Floors, and Counters: LS#5.
 7. Other interior surfaces as directed by Contract Administrator.
- D. Interior Joints in the following horizontal traffic surfaces:
 1. Control and Expansion Joints in Cast-in-Place Concrete Slabs: ES#2 sealant.

END OF SECTION 07920

Copyright: ARCONS Design Studio, PC

Issue Date: 10/2/18

