MLD Architects
LEWIS & HARNDEN

EXTERIOR WATERPROOFING
BANK OF AMERICA BUILDING

FOR
LEON COUNTY DEPARTMENT
OF FACILITIES MANAGEMENT

100% CD SUBMITTAL

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EXTERIOR WATERPROOFING
BANK OF AMERICA BUILDING
LEON COUNTY

TECHNICAL SPECIFICATIONS

END OF TECHNICAL SPECIFICATIONS

SECTION 01010 - SUMMARY OF THE WORK

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

PROJECT/WORK IDENTIFICATION:

General: Project name, architect, and consultant are as shown on the Contract Documents.

Contract Documents Indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:

Existing site conditions and restrictions on use of the site.

Summary of References: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, Specification Sections, Drawings, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual and including but not necessarily limited to printed material referenced by any of these. It is recognized that work of the contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions and other forces outside the contract documents.

Abbreviated Written Summary: Briefly and without force and effect upon the contract documents, the work of the Contract can be summarized as follows:

The work at the Bank of America Building includes pressure washing and repainting the precast concrete wall panels on the exterior of the building with two coats of premium acrylic coating system down to the plaza level, grinding out sealant in joints, in expansion and control joints, joints between different materials and replacing it with backer rod and premium silicone sealant; sealing and wet glazing gasketed window and spandrel perimeter and mullions with premium silicone sealant and preformed silicone sealant tape. Also included; patching mortar repair of spalled cast in place concrete and precast concrete panels; cleaning, priming and painting the painted exterior hollow metal doors, frames and windows frames. All windows are to be cleaned prior to final inspection.

Additive Alternate #1 – Repair the spalled concrete on the south vehicle ramp wall. Cut out damaged concrete on the north and south elevation of the wall south of the vehicle entry ramp, and install an expansion joint and repair concrete with epoxy modified mortar to match existing finishes/ profiles. Clean and install backer rod and silicone sealant at existing expansion/control joints, pressure wash and paint with two coats premium acrylic paint.

Additive Alternate #2 – Pressure wash, prime and paint exterior elevation of the parking garage precast concrete panels and columns (3 sides) excluding the inside face of columns and garage knee wall. Interior columns and ceilings not included in the scope of work.

Additive Alternate #3 – Clean and apply elastomeric waterproof coating system over exterior concrete masonry and stucco on the penthouse walls.

Additive Alternate #4 – Reroof the small west side entrance low slope roof, remove the existing gravel surface BUR down to the structural concrete, clean the deck and apply new reinforced roof coating system.

CONTRACTOR USE OF PREMISES:

General: The Contractor shall limit his use of the premises to the work indicated, so as to allow for full Owner occupancy and use by the public.

Use of the Site: Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.

Keep existing driveways and entrances serving the premises clear and available to the Owner, his employees and the public at all times. Do not use these areas for parking or storage of materials.

Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas agreed upon. If additional storage is necessary obtain and pay for such storage off site.

Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place.

IDENTIFICATION OF CONTRACTOR'S EMPLOYEES:

All employees of the Contractor, Subcontractors, Sub-Subcontractors and other personnel on the project site shall wear an identifiable company work shirt or have a laminated badge with the following information:

Worker's name.
Employer's name.

Company shirt or identification badge shall be worn and visible at all times when on the project site.

OWNER OCCUPANCY:

Owner Occupancy: Cooperate fully with the Owner or his representative during construction operations to minimize conflicts, maintain safe conditions and to facilitate Owner usage. Perform the work so as not to interfere with the Owner's operations.

ALTERATIONS AND COORDINATION:

General: The work of this Contract includes coordination of the work activities of this project, including preparation of general coordination drawings, diagrams and schedules, and control of site utilization, from beginning of construction activity through the end of this project.

All work shall comply with the Florida Building Code 2010 Edition.

MISCELLANEOUS PROVISIONS:

Mechanical/Electrical Requirements of General Work:

General: Except as otherwise indicated, comply with applicable requirements of the latest edition of the Standard Plumbing Code and Standard Mechanical Code (Division 2-14) Work. Except as otherwise indicated, comply with applicable requirements of latest edition of the National Electrical Codes for electrical provisions within units of general (Division 2-14) Work.

Performance Requirements for Completed Work:

General: The Contract Documents indicated the intended scope of work and future utilization of the building and its individual systems and facilities, where applicable to the scope of work. Compliance with governing regulations is intended and required for the work and for the Owner's occupancy and utilization.

END OF SECTION 01010

SECTION 01012 - MATERIALS AND EQUIPMENT

GENERAL:

STANDARDS:

Reference to standards, codes specifications, recommendations and regulations: refer to the latest edition of printing in effect at the date of issue shown in the Documents, unless other date is implied by the suffix number of the standard.

Applicable portions of the standards listed that are not in conflict with the Contract Documents shall be constructed as Specifications for this work.

Specified variations from the standards listed shall be constructed as amendments and the unaltered portions of the Standards shall remain in full effect.

In cases of discrepancies or variations between the listed Standards, the more stringent requirements shall govern.

Keep at the site not less than one copy, in good condition, of the standards specifically indicated as the methods for applying, installing, connecting and erecting. Inform involved personnel as to the requirements and availability of the standards.

DELIVERY AND STORAGE:

Schedule deliveries and unloading to prevent traffic congestion, blocking of access and interference with work. Arrange deliveries to avoid larger accumulations than can be suitably stored at site.

Pack and handle material to prevent damage during loading, delivering and storing.

Deliver packaged materials to site in manufacturer's original, unopened, labeled containers. Do not open containers until approximate time for use.

Store materials at locations that will not interfere with progress of work. Arrange locations of storage areas in approximate order of intended use.

Do not store materials on the roof.

Store materials in a manner that will prevent damage to materials or structure, and that will prevent injury to persons.

STORING AREAS:

The Owner will make available limited storage areas on the building site. At the start of the operation, make arrangements with the Owner's representative for the assignment of the areas. During construction maintain the areas in a neat condition.

Parking of private cars is not permitted on the property of the Owner. Notify employees and Subcontractors of this requirement at the beginning of work.

MANUFACTURER'S DIRECTIONS:

Prepare and apply products and materials according to the recommendations of the manufacturer when such recommendations are not in conflict with the Contract Documents.

Furnish to the Architect copies of the manufacturer's recommendations. Secure approval of recommendations before proceeding with work.

Keep at site not less than one copy, in good condition, of manufacturer's recommendations or directions pertaining to work at the site and MSDS sheets on all products and materials being used. Inform involved personnel of requirements and availability of manufacturer's recommendations.

END OF SECTION 01012

SECTION 01040 - PROJECT COORDINATION

PART 1 - GENERAL

RELATED DOCUMENTS

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

SUMMARY

This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:

- Coordination.
- Administrative and supervisory personnel.
- General installation provisions.
- Cleaning and protection.

Requirements for the Contractor's Construction Schedule are included in Section "Submittals".

COORDINATION AND MEETINGS

General: Prepare a written memorandum on required coordination activities. Include such items as required notices, reports and attendance at meetings. Distribute this memorandum to each entity performing work at the project site.

Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.

Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.

Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.

Make adequate provisions to accommodate items scheduled for later installation.

Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

Preparation of schedules.
Delivery and processing of submittals.
Progress meetings.
Project Closeout activities.

Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

Salvage materials and equipment involved in performance of, but not actually incorporated in, the work. Refer to other sections for disposition of salvaged materials that are designated as Owner's property.

SUBMITTALS

Schedule/Coordination Drawings: Prepare and submit schedule coordination Drawings.

Staff Names: Within 15 days of Notice to Proceed, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

GENERAL INSTALLATION PROVISIONS

Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

Recheck measurements and dimensions, before starting each installation.

Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

CLEANING AND PROTECTION

During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION 01040

SECTION 01300 - SUBMITTALS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including;
   1. Contractor's construction schedule.
   2. Submittal schedule.
   3. Daily construction reports and drawings.
   4. Shop Drawings.
   5. Product Data.
   6. Samples.

B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
   1. **Special prequalification requirements, low bidder to submit to Architect within 36 hours following bid opening.
   2. Applications for payment.
   3. Performance and payment bonds.
   4. Insurance certificates.
   5. List of Subcontractors.

C. Inspection and test reports are included in Section "Quality Control Services."

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
   2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
   3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Project name, and building reference.
2. Date.
3. Name and address of Architect.
4. Name and address of Contractor.
5. Name and address of subcontractor.
6. Name and address of supplier.
7. Name of manufacturer.
8. Number and title of appropriate Specification Section.
9. Drawing number and detail references, as appropriate.

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
   1. On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar- chart type Contractor's construction schedule. Submit within 30 days of the date established for "Commencement of the Work".
   1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".
   2. Within each time bar indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
   3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
   4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
   5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
   6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.

B. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.

C. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.

D. Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating "precalculated" and "actual" costs. On the line show dollar-volume of Work performed as of the dates used for preparation of payment requests.

E. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

F. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.5 SUBMITTAL SCHEDULE

A. After development and acceptance of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for establishment of the Contractor's construction schedule.

1.6 DAILY CONSTRUCTION REPORTS

A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Architect at weekly intervals:

1. Work completed this date
2. Area of work (graphically indicate on reduced plaza deck drawing sheet attached this section).
3. Products used, number of gallons, square feet covered, coverage rate, etc.
4. Approximate count of personnel at the site.
5. High and low temperatures, humidity, general weather conditions.
6. Accidents and unusual events.
7. Meetings and significant decisions.
8. Stoppages, delays, shortages, losses.
9. Emergency procedures.
10. Orders and requests of governing/inspecting authorities.
11. Change Orders received, implemented.
12. Field tests and inspections. Meter readings and similar recordings.
13. Partial Completions.
14. Substantial Completions authorized.

B. Reduced Plaza Deck Drawing Sheets are attached at the end of this section to be copies for use with Daily Construction Report.

1.7 PRODUCT DATA

A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, and performance curves.

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
   a. Manufacturer's printed recommendations.
   b. Compliance with recognized trade association standards.
   c. Compliance with recognized testing agency standards.
   d. Application of testing agency labels and seals.
   e. Notation of dimensions verified by field measurement.
   f. Notation of coordination requirements.
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
4. Submittals: Submit a minimum of five (5) copies of each required submittal. The Architect will retain three, and will return the others marked with action taken and corrections or modifications required.
   a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
6. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
7. Do not permit use of unmarked copies of Product Data in connection with construction.

1.8 SAMPLES

A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of materials, color range sets, and swatches showing color, texture and pattern.

1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Include the following:
   a. Generic description of the Sample.
   b. Sample source.
   c. Product name or name of manufacturer.
   d. Compliance with recognized standards.
   e. Availability and delivery time.

2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered

and installed.

3. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.

B. Submittals: Submit three (3) sets; one will be returned marked with the action taken.

1. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
2. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
3. Sample sets may be used to obtain final acceptance of the construction associated with each set.

C. Field Samples specified in individual Sections are special types of Samples. Field Samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the Work will be judged.

1. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.9 ARCHITECT'S ACTION

A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility

B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp.

PART 2 - PRODUCTS

1.1 PREFORMED SILICONE TAPE

A. **Low bidder to submit certification of application from the product manufacturer to the Project Architect within 36 hours after bid opening.

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01300

SECTION 03312 - CONCRETE REPAIR WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Removal of deteriorated concrete and subsequent patching and rebuilding.
2. Epoxy crack injection.
3. Corrosion-inhibiting treatments.

B. Related Sections include the following:
1. Division Section "Water Repellents" for coating and painting applied to concrete and masonry.

1.3 REFERENCES

A. Comply with provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified.

B. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute.

C. ACI 318 - Building Code Requirements for Reinforced Concrete; American Concrete Institute.

D. ACI 347R - Guide to Formwork for Concrete; American Concrete Institute.

E. ASTM C 33 - Standard Specification for Concrete Aggregates.

F. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

G. ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete.

H. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

I. ASTM C881- Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.

J. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

K. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

1.4 SUBMITTALS

A. Product Data: Include material descriptions, chemical composition, physical properties, test data, and mixing and application instructions.

1. Include Material Safety Data Sheets, if applicable.

B. Samples: Cured samples of overlay and patching materials.

C. Product Certificates: Signed by manufacturers certifying that products furnished comply with requirements and are recommended by manufacturer for uses indicated.

D. Qualification Data: For installers, and testing agency to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1. For products required to be installed by workers approved by product manufacturers, include letters of acceptance by product manufacturers certifying that installers are approved to apply their products.

E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of bonding agents, patching mortars, epoxy adhesives, and composite structural reinforcement with requirements indicated.

F. Rehabilitation program for each phase of the rehabilitation process, including protection of surrounding materials and Project site during operations. Describe in detail the materials, methods, equipment, and sequence of operations to be used for each phase of the Work.

1. If alternative materials and methods to those indicated are proposed for any phase of rehabilitation work, submit substitution request complying with Division 1 Section “Product Requirements” and provide a written description of proposed materials and methods, including evidence of successful use on other comparable projects, and a testing program to demonstrate their effectiveness for this Project.

1.5 QUALITY ASSURANCE

A. Comply with the following:

1. "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion" (Guideline No. 03730), published by the International Concrete Repair Institute, 1323 Shepard Drive, Suite D, Sterling, Virginia 20164-4428 - Copyright 1995.

B. Installer Qualifications: In addition to other requirements in Division 1 Section “Quality Requirements,” retain installers that employ workers trained and approved by manufacturer to apply corrosion-inhibiting treatments, concrete patching and rebuilding materials, epoxy crack injection materials, polymer overlays, and polymer sealers.

C. Manufacturer Qualifications: In addition to other requirements in Division 1 Section “Quality Requirements,” manufacturers shall have factory-trained representatives who are available for consultation and Project site inspection at no additional cost.

D. Source Limitations: Obtain each of the following through one source from a single manufacturer:

1. Concrete patching and rebuilding materials.
2. Epoxy crack injection materials.

E. Mockups: Build mockups for concrete removal and patching, joint repair, epoxy crack injection, polymer overlays, and polymer sealers, to demonstrate qualities of materials and execution.

1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original and unopened containers, labeled with type and name of products and manufacturers.

B. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.

C. Store cementitious materials off the ground, under cover, and in a dry location.

D. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

1.7 PROJECT CONDITIONS

A. Environmental Limitations for Epoxies: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer. During hot weather, cool epoxy components before mixing, store mixed products in shade, and cool unused mixed products to retard setting. Do not apply to wet substrates unless approved by manufacturer.

1. Use only Class A or B epoxies when substrate temperatures are below or are expected to go below 60 deg F (16 deg C) within 8 hours.

2. Use only Class C epoxies when substrate temperatures are above 60 deg F (16 deg C).

B. Cold-Weather Requirements for Cementitious Materials: Do not apply unless air temperature is between 40 and 90 deg F (5 and 32 deg C) and will remain so for at least 48 hours after completion of Work.

C. Cold-Weather Requirements for Cementitious Materials: Comply with the following procedures:

1. When air temperature is below 40 deg F (5 deg C), heat patching material ingredients and existing concrete to produce temperatures between 40 and 90 deg F (5 and 32 deg C).
2. When mean daily air temperature is between 25 and 40 deg F (minus 4 and plus 5 deg C), cover completed Work with weather-resistant insulating blankets for 48 hours after repair.
3. When mean daily air temperature is below 25 deg F (minus 4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 48 hours after repair.

D. Hot-Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Provide artificial shade and wind breaks, and use cooled materials as required. Do not apply to substrates with temperatures of 90 deg F (32 deg C) and above.

E. Environmental Limitations for High-Molecular-Weight Methacrylate Sealers: Do not apply when concrete surface temperature is below 55 deg F (13 deg C) or above **90 deg F (32 deg C)**. Apply only to substrates that have been dry for at least 72 hours.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

B. Products: Subject to compliance with requirements, provide one of the following:

1. Epoxy-Modified, Cementitious Bonding and Anticorrosion Agent:

a. Euclid Chemical Company; CORR-BOND.
b. Sika Corporation; Armatec 110 EpoCem.
c. BASF P24

2. Cementitious Patching Mortar:
a. BASF: Gel Patch
b. Sika Corporation; [SikaRepair 223] [or] [SikaRepair SHB].
c. Euclid: Verticoat

3. Form and Pour:
   a. BASF: LA40
   b. Sika: Sikacrete 211
   c. Euclid: Eucocrete

4. Epoxy Crack Injection Adhesive:
   a. Euclid Chemical Company; EUCO #352 LV, EUCO #452 LV, EUCO #620 LV, or EUCOPOXY INJECTION RESIN.
   b. Master Builders, Inc.; CONCRESIVE STANDARD LVI or SCB CONCRESIVE 1380.
   c. Sika Corporation; Sikadur 35 Hi-Mod LV, Sikadur 35 Hi-Mod LV LPL, Sikadur 52, or Sikadur Injection Gel.

2.2 BONDING AGENTS

A. Epoxy-Modified, Cementitious Bonding and Anticorrosion Agent: Product that consists of water-insensitive epoxy adhesive, portland cement, and water-based solution of corrosion-inhibiting chemicals that forms a protective film on steel reinforcement.

B. Epoxy Bonding Agent: ASTM C 881, Type V.

1. Thin Film Open Time: Not less than six hours.

2.3 PATCHING MORTAR

A. Patching Mortar: Unless otherwise indicated, use one of the following:

1. Job-Mixed Patching Mortar: 1 part portland cement complying with ASTM C 150, Type I, II, or III and 2-1/2 parts fine aggregate complying with ASTM C 144, except 100 percent passing a No. 16 (1.18-mm) sieve.
2. Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928.
3. Polymer-Modified, Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928, that contains a non-redispersible latex additive as either a dry powder or a separate liquid that is added during mixing.
4. Polymer-Modified, Silica-Fume-Enhanced, Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928, that contains silica fume complying with ASTM C 1240 and a non-redispersible latex additive as either a dry powder or a separate liquid that is added during mixing.
5. Epoxy-Modified, Cementitious Patching Mortar: Mixture of water-insensitive epoxy adhesive, portland cement, and graded aggregates.

2.4 REINFORCING MATERIALS

A. Reinforcing Steel: Shall be ASTM A615 Grade 60 deformed bars, free from oil, scale and rust, placed in accordance with the American Concrete Institute Standard Specifications and Details.

B. Coupled Splices: May be achieved using the ZAP Screwlock system manufactured by BarSplice Products, Inc.

C. Chemical Anchors: Shall be epoxy resin, such as CI 060 EP Crack Injection System as manufactured by Hilti.

2.5 MISCELLANEOUS MATERIALS

A. Epoxy Crack Injection Adhesive: ASTM C 881, Type I, IV, Grade 1, except for gel time.

B. Epoxy Capping Adhesive: Product manufactured for use with crack injection adhesive by same manufacturer.

C. Methylmethacrylate Sealer/Brighteners: Clear low-viscosity sealer recommended by manufacturer for sealing exterior exposed-aggregate concrete, and formulated to bring out color of aggregates and give concrete a wet look.

2.6 MIXES

A. Mix products in clean containers according to manufacturer's written instructions.

1. Add clean silica sand and coarse aggregates to products only as recommended by manufacturer.
2. Do not add water, thinners, or additives unless recommended by manufacturer.
3. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
4. Do not mix more materials than can be used within recommended open time. Discard materials that have begun to set.

B. Mortar Scrub-Coat: Mix with enough water to provide a consistency of thick cream.

C. Dry-Pack Mortar: Mix with just enough liquid to form a damp cohesive mixture that can be squeezed by hand into a ball but is not plastic.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Notify Architect seven days in advance of dates when areas of delaminated concrete and reinforcing bars will be located.

B. Locate areas of delamination using hammer or chain drag sounding and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries of delamination.

3.2 REMOVAL GEOMETRY

A. Excavate and remove all spalled and unsound concrete resulting from reinforcing steel corrosion. Maximum size chipping hammers shall be limited to 30 pounds. Fractured aggregate profile shall conform to NACE-6: Surface Preparation of Concrete.

B. Sawcut along edges of excavated areas, a minimum depth of ½ inch. Adjust saw depth to avoid cutting into reinforcing bars. Edges of repair areas adjacent to sound existing concrete shall be cut in straight lined regular shaped patterns.

C. Existing reinforcing shall be chipped out all around the bar until the entire circumference has been exposed to clean unaffected cross-section and a ¾-inch minimum clearance is achieved behind the backside of each bar.

3.3 PREPARATION

A. Protect people, motor vehicles, equipment, surrounding construction, Project site, plants, and surrounding buildings from injury resulting from concrete rehabilitation work.

1. Erect temporary protective covers over pedestrian walkways and at points of entrance and exit for people and vehicles that must remain in operation during course of concrete rehabilitation work. Construct covers of tightly fitted, 3/4-inch (19-mm) exterior-grade plywood supported at 16 inches (405 mm) o.c. and covered with asphalt roll roofing.
2. Protect adjacent equipment and surfaces by covering them with heavy polyethylene film and waterproof masking tape or a liquid strippable masking agent. If practical, remove items, store, and reinstall after potentially damaging operations are complete.
3. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.
4. Dispose of runoff from wet operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

B. Shoring: Install temporary supports before beginning concrete removal.

C. Concrete Removal: Saw-cut perimeter of areas indicated for removal to a depth of at least 1/2 inch (12.7 mm). Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcing. Remove loose and deteriorated concrete by breaking up and dislodging from reinforcing.

1. Remove concrete between cuts to a depth of at least 1/2 inch (12.7 mm).
2. Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded,

remove concrete from entire perimeter of bar to provide at least a 3/4-inch (19-mm) clearance.

3. Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound concrete is completely removed.
4. Provide fractured aggregate surfaces with a profile of at least 1/8 inch (3 mm) that are approximately perpendicular or parallel to original concrete surfaces. At columns and walls, make top and bottom surfaces level.
5. Thoroughly clean removal areas of loose concrete, dust, and debris.

D. Reinforcing Bar Preparation: Remove loose and flaking rust from reinforcing bars by abrasive blast cleaning, needle scaling, or mechanical wire brushing until only tightly bonded light rust remains.

1. Where section loss of reinforcing bar is more than 25 percent, or 20 percent in 2 or more adjacent bars, cut bars and remove and replace as directed by Architect. Remove additional concrete as necessary to provide at least a 3/4-inch (19-mm) clearance at existing and replacement bars. Splice replacement bars to existing bars according to ACI 318, by lapping, welding, or using mechanical couplings.

E. Surface Preparation for Corrosion-Inhibiting Treatment: Clean concrete by low-pressure water cleaning, detergent scrubbing, or sand blasting to remove dirt, oils, films, and other materials detrimental to treatment application. Allow surface to dry before applying corrosion-inhibiting treatment.

F. Surface Preparation for Overlays: Remove delaminated material and deteriorated concrete surface material**.** Roughen surface of concrete by sand blasting, shot blasting, scarifying, needle scaling, high-pressure water jetting, scabbling, flame blasting, or milling to produce a surface profile matching CSP per ICRI 03732. Sweep and vacuum roughened surface to remove debris followed by low-pressure water cleaning.

G. Surface Preparation for Sealers: Clean concrete by low-pressure water cleaning, or detergent scrubbing to remove dirt, oils, films, and other materials detrimental to sealer application.

3.4 REINFORCING DETAILS

A. Reinforcing bars that exhibit 20% or greater loss of the gross bar section shall be spliced to achieve 40 bar diameters overlap with a new bar of the same size.

B. Diminished bars with insufficient lap splice length shall be cut off and mechanically spliced with specified coupling device or chemically anchored with an epoxy set dowel.

3.5 MIXING AND PLACEMENT

A. All repair mortars shall be mixed according to the manufacturer’s instructions using a low speed drill and mixing paddle in an acceptable sized container. For extended mixes, the

coarse aggregate shall be added last, once a lump free homogenous mixture has been achieved.

B. Vertical and overhead repairs applied by hand with non-sag mortar shall be placed by trowel with sufficient pressure to form intimate contact with the substrate and promote cross-link of the hydrated cement into the existing concrete pores.

3.6 APPLICATION

A. Epoxy-Modified, Cementitious Bonding and Anticorrosion Agent: Apply to reinforcing bars and concrete by stiff brush or hopper spray according to manufacturer's written instructions. Apply to reinforcing bars in two coats, allowing first coat to dry two to three hours before applying second coat. Allow to dry before placing patching mortar or concrete.

B. Epoxy Bonding Agent: Apply to reinforcing bars and concrete by brush, roller, or spray according to manufacturer's written instructions, leaving no pinholes or other uncoated areas. Apply to reinforcing bars in at least two coats, allowing first coat to dry before applying second coat. Apply patching mortar or concrete while epoxy is still tacky. If bonding agent dries, recoat before placing patching mortar or concrete.

C. Mortar Scrub-Coat: Dampen repair area and surrounding concrete 6 inches (150 mm) beyond repair area. Remove standing water and apply scrub-coat with a brush, scrubbing it into surface and thoroughly coating repair area. If scrub-coat dries, recoat before applying patching mortar or concrete.

D. Patching Mortar: Unless otherwise recommended by manufacturer, apply as follows:

1. Wet substrate thoroughly and then remove standing water. Scrub a slurry of neat patching mortar mixed with latex bonding agent into substrate, filling pores and voids.
2. Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always troweling toward edges of patch. At fully exposed reinforcing bars, force patching mortar to fill space behind bars by compacting with trowel from sides of bars.
3. For vertical patching, place material in lifts of not more than 1 inch (25 mm) nor less than 1/8 inch (3 mm), 1/4 inch (6 mm). Do not feather edge.
4. For overhead patching, place material in lifts of not more than 1 inch (25 mm) nor less than 1/8 inch (3 mm), 1/4 inch (6 mm). Do not feather edge.
5. After each lift is placed, consolidate material and screed surface.
6. Where multiple lifts are used, score surface of lifts to provide a rough surface for application of subsequent lifts. Allow each lift to reach final set before placing subsequent lifts.
7. Allow surfaces of lifts that are to remain exposed to become firm and then finish to a smooth surface with a sponge float or burlap drag.
8. Wet-cure cementitious patching materials, including polymer-modified, cementitious patching materials, for not less than seven days by water-fog spray or water-saturated absorptive cover.

E. Epoxy Crack Injection: Comply with manufacturer's written instructions and the following:

1. Clean areas to receive capping adhesive of oil, dirt, and other substances that would interfere with bond, and clean cracks with oil-free compressed air or low-pressure water to remove loose particles.
2. Place injection ports as recommended by epoxy manufacturer, spacing no farther apart than thickness of member being injected. Seal injection ports in place with capping adhesive.
3. Seal cracks at exposed surfaces with a ribbon of capping adhesive at least 1/4 inch (6 mm) thick by 1 inch (25 mm) wider than crack.
4. Inject cracks wider than 0.003 inch (0.075 mm) to a depth of 8 inches (200 mm) or to a width of less than 0.003 inch (0.075 mm), whichever is less.
5. Inject epoxy adhesive, beginning at widest part of crack and working toward narrower parts. Inject adhesive into ports to refusal, capping adjacent ports when they extrude epoxy. Cap injected ports and inject through adjacent ports until crack is filled.
6. After epoxy adhesive has set, remove injection ports and grind surfaces smooth.

F. Corrosion-Inhibiting Treatment: Apply by brush, roller, or airless spray in two coats at manufacturer's recommended application rate. Remove film of excess treatment by high-pressure washing before patching treated concrete or applying a sealer or overlay.

G. Methylmethacrylate Sealer/Brighteners: Apply by brush, roller, or airless spray at manufacturer's recommended application rate.

1. Apply to exterior concrete or masonry surfaces indicated in drawings that are exposed to view, excluding traffic-bearing surfaces.

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified testing agency to sample materials and perform tests as follows:

1. Patching Mortar, Packaged Mixes: randomly selected samples tested according to ASTM C 928.
2. Patching Mortar, Field Mixed: randomly selected samples tested for compressive strength according to ASTM C 109/C 109M.

3. Epoxy Joint Filler: Core drilled samples to verify proper installation.

    a. Testing Frequency: One sample for each 100 feet (30 m) of joint filled.
    b. Where samples are taken, fill holes with epoxy joint filler.

4. Epoxy Crack Injection: Core drilled samples to verify proper installation.

    a. Testing Frequency: 3 samples from mockup and 1 sample for each 100 feet (30 m) of crack injected.
    b. Where samples are taken, fill holes with epoxy mortar.

END OF SECTION 03930

SECTION 071416 - FLUID-APPLIED WATERPROOF ROOF COATING SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Single-component acrylic polymer resin waterproof roof coating.

B. Related Sections:

1. Division 07 Section "Joint Sealants" for joint-sealant materials and installation above coating system.

2. Division 07 Section “Sheet Metal Flashing and Trim.”

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include manufacturer's written instructions for evaluating, preparing, and treating substrate, technical data, and tested physical and performance properties of waterproof roof coating.

B. Shop Drawings: Show locations and extent of waterproof roof coating. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, pipe penetration flashing tie-ins with adjoining waterproof roof coating, flashing and other termination conditions.

C. Samples: For the following products:

1. Flashing sheet, 10 by 8 inches (250 by 200 mm).
2. Membrane-reinforcing fabric, 10 by 8 inches (250 by 200 mm).

D. Qualification Data: For Installer.

E. Product Test Reports: For waterproof roof coating, based on evaluation of comprehensive tests performed by a qualified testing agency.

F. Field quality-control reports.

G. Warranties: Samples of specified manufacturer and installer special warranties.

H. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 10 years experience in manufacturing products complying with requirements of this section.

B. Installer Qualifications: A firm that is approved by waterproof roof coating manufacturer for installation of waterproof roof coating required for this Project.

C. Source Limitations: Obtain waterproof roof coating materials from single source from single manufacturer.

D. Approved by FMRC (Factory Mutual Research Corporation) according to Standard 4470 for Class 1 Roof Construction.

E. Mockups: Before beginning installation, install waterproof roof coating to 100 sq. ft. (9.3 sq. m) of roof deck surface to demonstrate surface preparation, crack and joint treatment, corner treatment, thickness, texture, and execution quality. If not using pavers, delete option in first subparagraph below.

1. A spring scale peel adhesion test, or other adhesion test of sample/mock up coating recommended by coating manufacturer, is to be performed by manufacturer's representative in presence of Architect and Contractor.

2. If Architect determines mockups do not comply with requirements, reapply waterproof roof coating until mockups are approved.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

F. Preinstallation Conference: Conduct conference at Project site.

1. Review waterproof roof coating requirements including surface preparation, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and flashings, installation procedures, testing and inspection procedures, and protection and repairs.

G. Manufacturer's Technical Representative: The approved manufacturer's technical representative shall be on the site at least once every seven days of the coating installation work specified and provide field report to Contractor, Architect and Owner.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver liquid materials to Project site in original containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, shelf life, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by waterproof roof coating manufacturer.

C. Remove and replace liquid materials that cannot be applied within their stated shelf life.

D. Protect stored materials from direct sunlight.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Apply coating within the range of ambient and substrate temperatures recommended by coating manufacturer. Do not apply coating to a damp or wet substrate, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F (3 deg C) above dew point.

1. Do not apply coating in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period.

B. Maintain adequate ventilation during application and curing of waterproof roof coating materials.

1.7 WARRANTY

A. Special Manufacturer's Warranty: Manufacturer's standard form in which waterproof roof coating manufacturer and Installer agree to repair or replace waterproof roof coating system that does not comply with requirements or that fails to remain watertight within specified warranty period.

1. Manufacturer’s warranty is for labor and material.

2. Failure includes, but is not limited to, failure of waterproof roof coating due to failure of substrate prepared and treated according to requirements.
3. Warranty Period: Ten years from date of Substantial Completion.

B. Special Installer's Warranty: Specified form, signed by Installer, covering Work of this Section, for warranty period of two years.

1. Warranty includes labor and material to correct or repair defective work or work not in accordance with the contract documents.

PART 2 - PRODUCTS

2.1 SINGLE-COMPONENT ACRYLIC POLYMER RESIN WATERPROOF ROOF COATING

A. Single-Component, Acrylic Polymer Resin Waterproof Roof Coating: Comply with liquid-applied, exterior waterproof roof coating materials, ASTM D6083, and with manufacturer's written physical requirements.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Firestone Building Products: AcryliTop PC-100.

2. Products: Subject to compliance with requirements available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Hydro-Stop, a Quest Construction Product
   b. Neogard, Div. of Jones-Blair; Neogard 7401.
   c. Sarnafil; Sikacoat Roof Coating System
   d. Advanced Coating Systems; Acu-Shield Elastomeric Roof Coating

3. Cured Membrane Characteristics and Minimum Standards:
   a. Fire Rating: ASTM E108: Class A
   b. Solar Reflectance: ASTM C1371: ≥0.90
   c. FM4470: no leakage, meets Class I-90, good resistance to foot traffic.
   d. ASTM D 638: Elongation > 300%
   e. ASTM E96: 3 perms moisture vapor

2.2 AUXILIARY MATERIALS

A. General: Provide auxiliary materials recommended by manufacturer to be compatible with one another and with waterproof roof coating, as demonstrated by waterproof roof coating manufacturer, based on testing and field experience.

B. Primer: Manufacturer's standard, factory-formulated polyurethane or acrylic polymer primer.

C. Sheet Flashing: 50-mil- (1.3-mm-) minimum, nonstaining, uncured sheet neoprene, or other membrane recommended by roof coating manufacturer.

1. Adhesive: Manufacturer's recommended contact adhesive.

D. Membrane-Reinforcing Fabric: Nonwoven, white polyester fabric, per ASTM D1117: 3.2-oz./sq. yd. (109-g/sq. m) or manufacturer's standard and recommended weight.

E. Joint Reinforcing Strip: Manufacturer's recommended polyester fabric.

F. Joint Sealant: Multicomponent polyurethane sealant, compatible with waterproof roof coating, complying with ASTM C 920 Type M, Class 25; Grade NS for sloping and vertical applications or Grade P for deck applications; Use NT exposure; and as recommended by manufacturer for substrate and joint conditions.

1. Backer Rod: Closed-cell polyethylene foam.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance.
   1. Verify that substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
   2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

A. Clean and prepare substrate according to manufacturer's written recommendations. Provide clean, dust-free, and dry substrate for waterproof roof coating application.

B. Mask off adjoining surfaces not receiving waterproof roof coating to prevent spillage or overspray affecting other construction.

C. Close off roof drains and other roof deck penetrations to prevent spillage and migration of waterproof roof coating fluids.

D. Remove grease, oil, bitumen, paints, curing compounds, acid residues, loose, deteriorated exiting coatings and other contaminants or failed coatings from roof surface.

E. Remove fins, ridges, and other projections and fill pitch pockets and flashing voids or pockets, and other voids.

3.3 PREPARATION AT TERMINATIONS AND PENETRATIONS

A. Prepare vertical and horizontal surfaces at terminations and penetrations through waterproof roof coating and at expansion joints, drains, and sleeves according to ASTM C 898 and manufacturer's written instructions.

B. Prime substrate unless otherwise instructed by waterproof roof coating manufacturer.

C. Apply waterproof coating in two separate applications, and embed a joint reinforcing strip in the first preparation coat as recommended by waterproof roof coating manufacturer.

   1. Provide sealant cants around penetrations and at inside corners of roof-to-wall and roof-to-curb butt joints when recommended by waterproof roof coating manufacturer.

3.4 JOINT AND CRACK TREATMENT

A. Prepare, treat, rout, and fill joints and cracks in substrate according to ASTM C 898 and waterproof roof coating manufacturer's written instructions. Remove dust and dirt from joints and cracks, complying with ASTM D 4258, before coating surfaces.

1. Comply with ASTM C 1193 for joint-sealant installation.
2. Apply bond breaker between sealant and preparation strip.
3. Prime substrate and apply a single thickness of preparation strip extending a minimum of 3 inches (75 mm) along each side of joint. Apply waterproof roof coating in two separate applications and embed a joint reinforcing strip in the first preparation coat.

B. Install sheet flashing and bond to deck and wall substrates where indicated or required according to waterproof roof coating manufacturer's written instructions.

1. Extend sheet flashings onto perpendicular surfaces and other work penetrating substrate according to ASTM C 898.

3.5 WATERPROOF ROOF COATING SYSTEM APPLICATION

A. Apply waterproof roof coating according to ASTM C 898 and manufacturer's written instructions.

B. Start installing roof coating system in presence of manufacturer's technical representative.

C. Apply primer over prepared substrate.

D. Unreinforced Waterproof Roof Coating Applications: Mix materials and apply waterproof roof coating by spray, roller, notched squeegee, trowel, or other application method suitable to slope of substrate.

1. Apply one or more coats of waterproof roof coating to obtain a seamless membrane free of entrapped gases, with an average dry film thickness of 45 mils (0.45 inches; 1.13 mm) and a minimum dry film thickness of 40 mils (1.016 mm) at any point, unless recommended thicker by manufacturer.
2. Apply waterproof roof coating to prepared wall terminations and vertical surfaces.
3. Verify wet film thickness of waterproof roof coating every 100 sq. ft. (9.3 sq. m).

E. Reinforced Waterproof Roof Coating Applications: Mix materials and apply waterproof roof coating by roller, notched squeegee, trowel, or other suitable application method.

1. Apply first coat of waterproof roof coating (base – primer), embed membrane-reinforcing fabric, and apply second coat of waterproof roof coating to completely saturate reinforcing fabric and to obtain a seamless reinforced membrane free of entrapped gases, with an average dry film total thickness of 45 mils (0.45 inches; 1.13 mm) and a minimum dry film thickness of 40 mils (1.016 mm) at any point, unless recommended thicker by manufacturer.

2. Apply reinforced waterproof roof coating to prepared wall terminations and vertical surfaces.
3. Verify wet film thickness of waterproof roof coating every 100 sq. ft. (9.3 sq. m).

F. Premium three stage, fabric reinforced flexible acrylic waterproof coating, fluid applied in successive stages to form continuous seamless, watertight liquid applied membrane; 40 mil (0.04 inches; 1.016 millimeters) DFT

3.6 FIELD QUALITY CONTROL

A. Engage a full time site supervisor qualified by the waterproof roof coating / liquid applied membrane manufacturer to inspect substrate conditions, surface preparation, and application of the membrane, flashings, protection, and drainage components; and to furnish daily reports to Architect.

B. Flood Testing: Flood test each deck area for leaks, according to recommendations in ASTM D 5957, after completing waterproof roof coating but before overlaying construction is placed. Install temporary containment assemblies, plug or dam drains, and flood with potable water.

1. Flood to an average depth of 2-1/2 inches (64 mm) with a minimum depth of 1 inch (25 mm) and not exceeding a depth of 4 inches (100 mm). Maintain 2 inches (50 mm) of clearance from top of sheet flashings.
2. Flood each area for 24 hours.
3. After flood testing, repair leaks, repeat flood tests, and make further repairs until waterproof roof coating installation is watertight.

C. Owner may engage an independent testing agency to observe flood testing and examine underside of decks and terminations for evidence of leaks during flood testing.

D. Manufacturer’s Technical Representative: The approved manufacturer’s technical representative shall be on the site at least once every seven days of the coating installation work specified and provide field report to Contractor, Architect and Owner.

3.7 CURING, PROTECTION, AND CLEANING

A. Cure waterproof roof coating according to manufacturer's written recommendations, taking care to prevent contamination and damage during application stages and curing.

1. Do not permit foot or vehicular traffic on unprotected membrane.

B. Protect waterproof roof coating from damage and wear during remainder of construction period.

C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 071416

SECTION 07900 - JOINT SEALERS

PART 1 - GENERAL

RELATED DOCUMENTS:

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

SUMMARY:

Extent of each form and type of joint sealer is indicated on drawings and schedules.

This Section includes joint sealers for the following locations:

Exterior joints in vertical surfaces and nontraffic horizontal surfaces as indicated below.

Silicone sealants:

Control or expansion joints in exterior brick masonry.
Joints in stone coping and precast concrete/stone panel joints indicated.
Wet glazing bead at glass windows indicated.
Perimeter joints between materials listed above and metal flashings system.
Perimeter joints between aluminum window frame or casing trim and masonry, concrete or steel lintel
Perimeter joints between steel door jamb or louver frame and masonry, concrete or steel lintel.
Joints between different materials listed above or indicated in drawings.

Related Sections: The following sections contain requirements that relate to this section:

Painting is specified in Division 9.

SYSTEM PERFORMANCES:

Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

SUBMITTALS:

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The Bidder/Applicator of the sealant system specified in this section shall submit evidence of sealant manufacturer's approval of applicator for this specific project on manufacturer's letterhead, and copy of sample sealant warranty within 36 hours of bid opening.
****

Product Data from manufacturers for each joint sealer product required, including instructions for joint preparation and joint sealer application.

Certificates from manufacturers of joint sealers attesting that their products comply with specification requirements and suitable for the use indicated.

Compatibility and adhesion test reports from elastomeric sealant manufacturer indicating that materials forming joint substrates and joint sealant backings have been tested for compatibility and adhesion with joint sealants. Include sealant manufacturer's interpretation of test results relative to sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.

Compatibility with elastomeric coating system manufacturer certification and test reports indicating that materials forming joint substrates and joint sealant backings have been tested for compatibility and adhesion with elastomeric coating system specified and submitted. Include elastomeric coating manufacturer's test results relative to coating performance and recommendations for primers and substrate preparation needed to obtain adhesion.

Product test reports for each type of joint sealers indicated, evidencing compliance with requirements specified.

Preconstruction field test reports indicating which products and joint preparation methods demonstrated acceptable adhesion to joint substrates.

QUALITY ASSURANCE:

Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required.

Investigate materials failing compatibility or adhesion tests and obtain joint sealer manufacturer's written recommendations for corrective measures, including use of specially formulated primers.

Preconstruction Field Testing: Prior to installation of joint sealants, field-test their adhesion to joint substrates as follows:

Locate test joints where indicated or, if not indicated, as directed by Architect.

Conduct field tests for each application indicated below:

Each type of elastomeric sealant and joint substrate indicated.

Test Method: Test joint sealers by hand pull method described below:

Install joint sealants in 5-feet joint lengths using same materials and methods for joint preparation and joint sealant installation required for completed Work. Allow sealants to cure fully before testing.

Make knife cuts as follows: A horizontal cut from one side of joint to the other followed by 2 vertical cuts approximately 2 inches long at side of joint and meeting horizontal cut at top of 2 inch cuts. Place a mark 1 inch from top of 2 inch piece.

Use fingers to grasp 2 inch piece of sealant just above 1 inch mark; pull firmly down at a 90 degree angle or more while holding a ruler along side of sealant. Pull sealant out of joint to the distance recommended by sealant manufacturer for testing adhesive capability, but not less than that equaling specified maximum movement capability in extension; hold this position for 10 seconds.

Report whether or not sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate.

Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

Inspection and approval of joint preparation by Architect, Owner, and/or Manufacturer's Representative prior to application of new sealant.

Test cuts of completed joint sealant installation at 25 locations determined by the Architect, owner's Representative or Manufacturer's Representative to verify compliance.

References: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ASTM D 4258-83 (1988) Standard Practice for Surface Cleaning Concrete for Coating.
ASTM D 4262-83 (1988) Test Method for pH of Chemically Cleaned Concrete Surfaces.
ASTM C-920, Type S, Grade NS, Class 25, Use T, NT, M, G, A, and O.
Federal Specification TT-S-001543 A for silicone building sealants.
Federal Specification TT-S-00230C for one-component building sealants.

DELIVERY, STORAGE, AND HANDLING:

Deliver materials to Project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multicomponent materials.

Store and handle materials in compliance with manufacturers' recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

PROJECT CONDITIONS:

Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:

When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40 deg F (4.4 deg C).

When joint substrates are wet due to rain, frost, condensation, or other causes.

Joint Width Conditions: Do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.

Joint Substrate Conditions: Do not proceed with installation of joint sealers until contaminants capable of interfering with their adhesion are removed from joint substrates.

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SPECIAL PROJECT SEALANT WARRANTIES

Special Project Warranties: Submit for verification two copies of special 20 year "Sealant Guarantee" from Manufacturer, covering silicone sealant products of this section. Provide written warranties by the Contractor, and his authorized installer, agreeing to replace/repair defective materials and workmanship. Repairs and replacements required because of events beyond Contractor's/Installer's/Manufacturer's control (and which exceed performance requirements) shall be completed by Contractor/Installer and paid for by the Owner.

The Manufacturer's sealant warranty period is 20 years for silicone sealants. Warranty is to be nonprorated and no penal sum.

The Contractor and Installer's warranty period is two years after date of substantial project completion with no dollar limit and no penal sum.

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SEQUENCING AND SCHEDULING:

Installation of joint sealer with other products as recommended by manufacturer of sealant, and other products. Submit manufacturer's recommendation of sequence.

Sequence schedule installation of joint sealers as soon as possible following cut out of existing sealant, grinding and thoroughly cleaning joint, and inspection of joint preparation by Architect or Owner's Representative, unless otherwise indicated.

PART 2 - PRODUCTS

MATERIALS, GENERAL:

Compatibility: Provide joint sealers, joint fillers 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.

Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

ELASTOMERIC JOINT SEALANTS:

Elastomeric Sealant Standard: Provide manufacturer's standard neutral curing, elastomeric sealant of base polymer indicated which complies with requirements of Federal Specifications TT-S-00230C, Type II, Class A, and with ASTM C 920 requirements, including those referenced for Type, Grade, Class, and Uses.

Single Part Neutral Curing Silicone Sealants for brick masonry, concrete, aluminum, painted steel joints, and other joints specifically indicated; use NT: Type S, Grade NS, Class 25; and Uses NT, M, A, and O.

Product: Subject to compliance with the requirements, provide one of the following products:
Dow Corning 756 Silicone Sealant.
Dow Corning 790 Silicone Sealant.
Dow Corning 791 Silicone Sealant.

Minimum Performance Criteria:

Colors		Minimum 10 standard colors
MIL-S-8802 Tack-Free Time, 50% RH, hours		1
Curing Time RH @ 25 deg.C. (77 deg.F), days	7-14	
MIL-S-8802 Full Adhesion, days	14-21	
Flow, Sag or Slump, in 3-inch wide joint	None	
Working Time, minutes		10-20

As Cured, after 7 days at 25 deg.C (77 deg.F) and 50% RH

ASTM D 2240 Durometer Hardness, Shore A, points	15
ASTM D 412 Ultimate Tensile Strength, max. elongation, psi	100
ASTM D 412 Elongation, percent maximum	1600
MIL-S-8802 Peel Strength, lbs/in.	25
ASTM C 1135 Tensile Adhesion	
With 25% extension	15
With 50% extension	20
TT-S-001543 Staining, after 14 days of 50% compression, at 158 deg.F. on concrete, granite, limestone and brick	None
Ozone Resistance	Good
Weathering, after 6000 hours in Atlas Weatherometer	Min. change in hardness
Joint Movement Capabilities, percent,	
Extension	+100
Compression	-50
Fire Endurance, hours	2

********Applicator to verify sealant manufacturer will provide specified warranty and products will comply with performance criteria.********

MISCELLANEOUS MATERIALS:

Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer-substrate tests and field tests.

Cleaners for Nonporous Surfaces: Provide nonstaining, chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in-service performance.

Masking Tape: Provide nonstaining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

PART 3 - EXECUTION

EXAMINATION:

Examine joints indicated to receive joint sealers, with Installer present, for compliance with requirements for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

PREPARATION:

Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:

Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealers; oil; grease; waterproofing; water repellents; water; surface dirt; and frost.

Clean concrete, masonry, unglazed surfaces of ceramic tile and similar 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 sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

Remove laitance and form release agents from concrete.

Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile; and other nonporous surfaces by chemical cleaners or other means, which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which 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.

INSTALLATION OF JOINT SEALERS:

General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications and conditions indicated.

Installation of Sealant Backing: Install sealant backings to comply with the following requirements:

Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealant relative to joint widths, which allow optimum sealant movement capability.

Do not leave gaps between ends of joint fillers.
Do not stretch, twist, puncture, or tear joint fillers.
Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.

Install bond breaker tape between sealants and joint fillers, compression seals or back of joints where required to prevent third-side adhesion of sealant to back of joint.

Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

Provide concave joint configuration per Figure 6A in ASTM C 1193, unless otherwise indicated.

Provide flush joint configuration per Figure 6B in ASTM C 1193, where indicated.
Use masking tape to protect adjacent surfaces of recessed tooled joints.

CLEANING:

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

PROTECTION:

Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

END OF SECTION 07900

SECTION 07910 - PREFORMED SILICONE SEALANT TAPE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Provide Preformed Silicone Sealant System to above grade exterior surfaces indicated, including surface substrate testing, preparation, priming, and preformed sealant system installation.
   1. Types of Preformed Silicone Sealant Systems include:
      a. Primer: Dow Corning® 1200 Primer Coat – As required by sealant manufacturer based on field adhesion testing required.
      b. Preformed Silicone Sealant: Dow Corning® 123 silicone Seal.
   2. Application of Preformed Silicone Sealant System includes:
      a. Precast and exterior gaskets at window perimeter joint shoulder surfaces, where specifically indicated.

B. Related Sections:
   1. Section 07900**:** Joint Sealants

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM)

B. Federal Specifications (Federal Test methods)

1.03 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide only Preformed Silicone Sealant System materials that comply with performance requirements when tested by methods indicated. Please note that high consistency silicone rubber extrusions are not equal in composition and performance criteria for high movement expansion joint remediation and repair. Only Preformed Silicone Sealant Systems are allowed.

1.04 QUALITY ASSURANCE

A. Qualifications:
   1. **Low bidder to submit certification of application from the product manufacturer to the Project Architect within 36 hours after bid opening.
   2**.** Installer with a minimum of three (3) years successful experience in the application of waterproof preformed silicone sealant systems.
   3. Manufacturer with a minimum of ten (10) years successful experience in the production of preformed silicone sealant technology.
      a. Technical Field Service**:** Manufacturer capable of providing field service representation before, during and after installation.

B. Mock-Up**:** Install mock-up using acceptable Preformed Silicone Sealant System including

surface preparation, and repair methods as prescribed by sealant manufacturer's instructions. Obtain A/E/Consultants/Owner's approval of joint remedy, treatments, and repairs, including color, texture appearance and workmanship standard. Manufacturer or their designated Representative to assist in mock-up adhesion testing and analysis required for warranty, prior to installation of full system.

1. Mock-Up Size: Five (5) feet by agreed width - (MINIMUM SIZE).
2. Mock-Up Substrate: Precast wall panel and gasketed window perimeter as agreed to with A/E/Consultant/Owner prior to mock-up installation.
3. Maintain mock-up during construction for workmanship standard.
4. Mock-up to be incorporated into final construction remediation system upon A/E/Consultant/Owner's approval.

1.05 SUBMITTALS

A. Refer to Division 1**,** Section 01300 for submittal procedures.

B. Product Data**:** Submit manufacturer's most current technical product data indicating product testing results and compliance as indicated.

C. Samples**:** Submit Preformed Silicone Sealant sample for each color as required for project.

D. Quality Control Submittals:
1. Manufacturer's field service reports indicating system observation before, during and after installation.
2. Preinstallation Conference: Submit report verifying project site conditions, and A/E/Consultant/Owner's acceptance of mock-up prior to installation, including any special manufacturer's instructions and requirements. Review of protection plan for surrounding areas and adjacent surfaces should be included.

E. Contract Closeout Submittals:
1. Manufacturer's Warranty: Manufacturer's executed standard warranty form with authorized signatures and endorsements.
2. Contractor and Installer's executed warranty, as specified.

1.06 DELIVERY, STORAGE AND HANDLING

A**.** Deliver**,** store, handle, and protect all products in accordance with manufacturer and Division One, Section 01012, Materials and Equipment.

B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Deliver Preformed Silicone Sealant Material in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Store and protect Preformed Silicone Sealant materials from harmful weather conditions and at temperatures conditions recommended by system manufacturer. Protect from damage during construction and while stored.

1.07 PROJECT CONDITIONS

A. Environmental Requirements: Verify substrates and ambient air temperature at project site before and during and after application to assure compliance with manufacturer’s recommendations.
   1. Weather Conditions**:** In accordance with manufacturer's instructions, do not apply preformed silicone sealant in snow, rain, fog, or mist, or when such conditions are expected. Allow surfaces to attain dry conditions as recommended by manufacturer before system application.
   2. Compliance**:** Follow manufacturer's specific safety, health and environmental recommendations per most recent Material Safety Data Sheets, technical bulletins and instructions.

1.08 WARRANTY

A. Manufacturer's Warranty**:** Submit manufacturer's standard warranty form for preformed silicone sealant systems, including affirmation of coating system mock-up observation and approval as required by warranty provisions. Approval by manufacturer for warranty is required prior to system application. Submit manufacturer's "Request Form" and supporting documentation at completion of system mock-up installation.
   1. Beneficiary: Issue warranty in legal name of project Owner.
   2. Warranty Period: Ten (10) Years.
   3. Warranty Function: Waterproof above grade.
   4. Warranty Areas: All locations of Dow Corning @ 123 Silicone Sealant.

B. Special Project Warranty: Submit installer's warranty, on warranty form, signed by Installer, covering Work of this Section, including all components of sealant system such as window gaskets, and sealant joints, for the following warranty period:
   1. Two (2) years.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Products specified as the standard of quality are manufactured by: DOW CORNING CORPORATION, INC. MIDLAND, MICHIGAN 48686-0994, Telephone: (989) 496-6000.

2.02 MATERIALS

A. Preformed Silicone Sealant System:
   1. Dow Corning® 123 Silicone Seal.
   2. Dow Corning® 795 Silicone Building Sealant
   3. Dow Corning® 1200 Prime Coat – as required by manufacturer.
   4. Colors: Preformed silicone sealant color to be selected by Architect.
   5. Colors: Silicone building sealant color to be selected by Architect from manufacturer’s standard and specialty colors.

B. Performance Requirements: (Preformed Silicone Sealant System)
   1. Durometer Hardness: ASTM D-412 shore “A”: 25
   2. Tensile Strength: ASTM D412; 400 PSI.
   3. Elongation Percent: ASTM D 412, 400 percent elongation.
   4. Ultimate Strength, ASTM C 1135, 40 PSI.
   5. Ultimate Elongation, ASTM C 1135, 800 percent elongation.
   6. Movement Capability, ASTM C-719, +200/-50 percent movement.
   7. Peel Strength sealant adhesive, ASTM C-794, 25 PLI (with Dow Corning® 795 Silicone Building Sealant used as adhesive).

2.03 RELATED MATERIALS

A. Sealants: Refer to Division 7, as required for related sealant requirements. Use Primers as required by system manufacturer.

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with manufacturer's most recently published product data, including installation instructions, substrate testing, surface preparation and cleaning, and post installation testing.

3.02 EXAMINATION

A. Verify substrate conditions are acceptable for preformed silicone sealant system installation in accordance with manufacturer's instructions.
   1. General**:** Determine acceptable removal techniques for contaminants harmful to preformed silicone sealant system performance, such as dust, dirt, grease, oils, curing compounds, form release agents, laitance, and previous films or water repellent coatings. Peeling paint films or other previous coatings where chalking is found must be prepared according to manufacturer’s instruction. All surfaces must be clean, dry, frost free, and dust free.

3.03 PREPARATION

A. Protect adjacent work areas and finished surfaces from damage during preformed silicone sealant system installation. Apply masking tape to both sides of preformed silicone sealant repairs to ensure good aesthetics.

B. Prior to installation, clean substrates of substances that could impair the bond of the sealant adhesive. Non-porous surfaces should be cleaned using the two-cloth solvent wipe method as outlined by the sealant manufacturer. Coordinate cleaning, priming and installation to avoid contamination of wet or adjacent surfaces.

3.04 APPLICATION

A. Apply 1/4" inch to 3/8” inch wide beads of Silicone Sealant adhesive to each side of the preformed silicone sealant joint as recommended by manufacturer to all prepared surfaces indicated. Install new Silicone Sealant adhesive in same color as Preformed Silicone Sealant materials.

1. Apply Dow Corning 1200 Prime Coat as required by manufacturer, using brush or cloth techniques per manufacturer’s instructions.
2. Allow 30 minutes drying time before silicone sealant is installed.

B. Apply Preformed Silicone Sealant System by embedding the silicone seal into the wet sealant adhesive within ten minutes of wet sealant adhesive application. Press the preformed silicone seal into the sealant adhesive to wet-out the silicone seal and the substrate. Apply and embed into the wet sealant using a roller or squeegee using light consistent pressure along the bonding surfaces. Follow installation techniques recommended by manufacturer to achieve prescribed finish results.

1. Apply horizontal joints and complete installation before applying vertical joints. Vertical joints should be lapped over horizontal joints as recommended by manufacturer.
2. Allow sealant to cure for a minimum of ten days before performing adhesion testing as required by manufacturer.

C. Match approved Mock-Up samples for color, texture, and overall aesthetics. Remove, refinish, or re-install work not in compliance with the Contract Documents.

3.05 FIELD QUALITY CONTROL

A. Where required in 1.04 above, provide manufacturer's field service consisting of periodic site visits by manufacturer or their distributor representative for observation of Preformed Silicone System application.

B. The Owner reserves the right to complete recommended testing required by the manufacturer at completion of work to assure warranty requirements, and contract compliance are met.

3.06 CLEANING AND PROTECTION

A. Do not apply preformed silicone sealant system in windy conditions or when application is deposited on surfaces beyond those that have been masked. Protect installed silicone seal from damage during construction.

B. Remove temporary coverings and protection of adjacent work areas upon completion. Immediately remove excess sealant from areas not intended to be sealed. Remove construction debris from project site on a planned daily basis.

END OF SECTION 07910

SECTION 09830 - SPECIAL COATINGS AND PAINTING

PART 1 - GENERAL

RELATED DOCUMENTS

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

SUMMARY

This Section includes applying special coating systems to items and surfaces scheduled, including surface preparation, prime coats, and topcoats.

Coating or painting all exterior exposed surfaces is required whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be coated or painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.

Painting is not required on prefinished items, finished metal surfaces, inaccessible, concealed surfaces, operating parts, and labels.

Types of special coating and painting systems required for the Project include the following:

Special coatings and painting for exterior use in this project include the following:
Premium high performance acrylic architectural coatings.

Related Sections: The following Sections contain requirements that relate to this Section:

Joint Sealers are specified in Division 7.

SUBMITTALS

General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.

Product data for each coating system specified, including patching compound and primers.

Provide the manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each material proposed for use.

List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.

Application instructions including mixing, surface preparation, compatible primers and top coats, recommended wet and dry film thickness, recommended application methods.

Certification of volatile organic compounds (VOCs) by the manufacturer for the products supplied.

Samples for initial color selection in the form of manufacturer's color charts.

After color selection, the Architect will furnish color chips for surfaces to be coated.

Samples for Verification Purposes: Provide samples of each color and material to be applied with texture to simulate actual conditions on representative samples of the actual substrate.

Provide stepped samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until the required sheen, color, and texture are achieved.

Provide a list of material and application for each coat of each sample. Label each sample as to location and application.

Submit samples on the following substrates for the Architect's review of color and texture only.

Concrete: Provide two 4-inch-square samples for each color and finish.

Stucco: Provide two 8-inch-square samples of stucco for each finish and color.

Ferrous Metal: Provide two 4-inch-square samples of flat metal and two 8-inch-long samples of solid metal for each color and finish.

QUALITY ASSURANCE

****

Applicator Qualifications: Engage an experienced applicator who has not less than five years of experience in application of specified coating and painting systems similar to those required for this project, and who has successfully completed a minimum of four coating system applications similar in material to those indicated for the Project, and who is acceptable to, and approved by, the manufacturer of primary coating materials.

****

Single-Source Responsibility: Provide primers and undercoat material produced by the same manufacturer as the finish coats for each type of coating. Use only thinners recommended by the manufacturer and only within recommended limits.

Field Samples: On wall surfaces and exterior components, duplicate finishes of prepared samples. Provide full-coat finish samples on at least 200 sq. ft. of surface until the required sheen, color, and texture are obtained; simulate finished lighting conditions for reviewing in-place work.

Final acceptance of colors will be from job-applied samples.

The Architect will select one area, or surface to represent surfaces and conditions for each type of coating and substrate to be coated. Apply coatings in this room, area, or surface according to the schedule, or as specified. After finishes are accepted, this area or surface will be used for evaluation of coating systems of a similar nature.

The Contractor shall be responsible for application of the products in accordance with the manufacturer's instructions using the following tools at intervals indicated to ensure quality:

Wet film thickness gage.
Caliper mil gage.
Sling psychrometer.
Temperature gages.

The Contractor shall be responsible to keep a daily construction log containing readings from the use of the above listed instruments.

The Contractor shall submit a copy of the daily construction log, tests, and reports to the Architect weekly.

The Coating or Painting Manufacturer's Technical Representative shall make periodic coating and painting application inspections during the work, to be coordinated with the Architect. The Manufacturer's Technical Representative shall provide written inspection reports to the Architect.

SPECIAL COATING AND PAINTING PROJECT WARRANTIES

****

Special Coating and Painting Project Warranty: Provide written warranties by the Contractor and Installer agreeing to replace/repair defective materials. Provide written warranty by the Manufacturer of special coating and painting materials agreeing to replace defective materials and coatings (cracked, chipped, flaked, or peeling). Repairs and replacements required because of events beyond Contractor's/Installer's/Manufacturer's control (and which exceed performance requirements) shall be completed by Contractor/Installer and paid for by Owner.

****

References: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ASTM D 4258-83 (1988) Standard Practice for Surface Cleaning Concrete for Coating.
ASTM D 4261-83 (1988) Practice for Surface Cleaning Concrete Masonry for Coating.
ASTM D 4262-83 (1988) Test Method for pH of Chemically Cleaned Concrete Surfaces.
ASTM D 1653-93 Water Vapor Transmission of Organic Coatings Films.

DELIVERY, STORAGE, AND HANDLING

Deliver materials to the job site in the manufacturer's original, new, unopened packages, and containers bearing manufacturer's name and label, and the following information:

Name or title of material.
Product description (generic classification or binder type).
Manufacturer's name, stock number and date of manufacture.
Contents by volume, for major pigment and vehicle constituents.
Thinning instructions.
Application instructions.
Color name and number.
Handling instructions and precautions.

Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.

Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying the coatings.

PROJECT CONDITIONS

Apply coatings only when the temperature of surfaces to be coated and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C) (unless otherwise specified by coating manufacturer or printed technical data sheet for product specified).

Do not apply coatings in snow, rain, fog, or mist; when the relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

Allow wet surfaces to dry thoroughly and attain the temperature and conditions specified before proceeding with or continuing the coating operation.

Work may continue during inclement weather only if areas and surfaces to be coated are enclosed and the temperature within the area can be maintained within limits specified by the manufacturer during application and drying periods.

Provide temporary lighting to achieve a well-lit surface with a level of not less than 80 foot candles measured mid-height.

Maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and for 48 hours after application of finishes, or longer if required to obtain full cure as indicated by manufacturer's instructions.

Maintenance Stock

At time of completing application, deliver stock of maintenance material to the Owner.

Furnish not less than one properly labeled and sealed container of each type of finish coat of each color, taken from batch mix furnished for the work. Furnish the following amounts for each coating system:

Premium Acrylic Architectural Coating: 3 gallon
Premium Thermoset Fluoropolymer Coating: 1 quart

PART 2 - PRODUCTS

MANUFACTURERS

Premium Acrylic Architectural Coating
BASF
PPG

SPECIAL COATING AND PAINTING MATERIALS, GENERAL

Material Compatibility: Provide conditioners, primers, finish coat material, and related materials that are compatible with one another and the substrates indicated under conditions of service and application as demonstrated by the manufacturer based on testing and field experience.

Material Quality: Provide the highest grade of the various coatings as regularly manufactured by acceptable

coating manufacturers. Materials not displaying manufacturer's identification as a best-grade product will not be acceptable.
Colors: Provide custom colors of the finished coating systems if required to match colors indicated by reference to existing colors indicated in drawings.

Conditioner/Primer/Sealers: Provide products listed in the Coating and Painting Schedule or, with Architect's approval, provide the manufacturer's better quality recommended factory-formulated conditioner/primer/sealers that are compatible with the substrate and finish materials indicated.

Intermediate Coat Materials: Provide products listed in Coating and Painting Schedule or, with Architect's approval, provide the manufacturer's better quality recommended factory-formulated, intermediate coat materials that are compatible with the substrate, primers or base coat materials, and the finish materials indicated.

Finish-Coat Materials: Provide products listed in the Coating and Painting Schedule or, with Architect's approval, provide the manufacturer's better quality recommended factory-formulated, finish-coat materials.

Special Coatings and Painting Schedule: Special Coating and Painting Schedule found at the end of this section lists the coating and painting product name and number of each manufacturer for each coating system and area.

PREMIUM ACRYLIC PAINT/COATING SYSTEM

A water based 100% Acrylic paint coating for concrete and masonry.

Minimum Performance Criteria:

Flash Point	Lab Value	Non-combustible 200^0F
Elongation	ASTM D412-87	@ 77^0F = 180% @ 9.4 mil DFT
Tensile Strength	ASTM D2370	@ 77^0F = 340 psi @ 9.4 mil DFT
Water Vapor Permeance	ASTM E96	Perms = 19
	ASTM D1653	Perms = 11.9
Mildew Resistance	TT-P-29G	21 days = Resistance
	ASTM D-3273	Passes
Accelerated Weathering	ASTM G26-77 (Xenon Arc)	5000 hrs. = No defects
	TT-C-555B Para 4.4.6 (Carbon Arc)	400 hrs. = Meets Requirement
Flexibility	ASTM D-1737	Passes 1/4" mandrel
Lead Content	ASTM D-2088	0.075% Meets Requirement
Water Wind Driven Rain	TT-C-555B	No Water Penetration
	ASTM D-6904-03	Passes
Min. Dry Film Thickness		Minimum 7-8 mils. DFT (2 coats) Manufacturer may recommend higher dry mil thickness
Solids by weight		58% +/- 2%

EXTERIOR PAINT SYSTEMS:

A. Provide the following paint systems for the metal door frame at the west side (main) entrance, as indicated.

B. Coating System: Premium Thermoset Fluoropolymer Coating
   1. Area: Previously painted steel (including exterior hollow metal windows, doors and jambs).
   2. Surface Preparation:
      a. NACE RP-01-72 Water blasting and hand sanding SSPC-SP 2 Hand Tool Cleaning
      b. SSPC-SP 1 Solvent Cleaning or Power Wash
      c. SSPC-SP 2 Hand Tool Cleaning/Hand Sanding
      d. SSPC-SP 3 Power Tool Cleaning Rusted Areas

C. Rusty Metal Treatment: Rust eliminator/treatment applied at concealed rust condition, surface rust unable to be cleaned and inaccessible conditions to be applied at spreading rate recommended by manufacturer (minimum 250 sf/gal.).
   1. Quick Tann II – Lektro – Tech, Inc. (813/254-1380).

D. Primer, Industrial, Rust Inhibitive: Minimum DFT 3, Maximum DFT 5:
   1. Tnemec Series 135 Chembuild
   2. PPG – Coraflon ADS Epoxy Primer ADS 573/ADS 574

E. Intermediate Coat: Modified Polyamidoamine Epoxy all surfaces DFT 3.0 – 5.0
   1. Tnemec Series 135 Chembuild
   2. PPG - Coraflon ADS Epoxy Primer ADS 573/ADS 574

F. Coat 1 – Aliphatic Acrylic Polyurethane: Minimum DFT 3, Maximum DFT 5
   1. Tnemec Series 73 Endura-Shield
   2. PPG - Coraflon DTM Urethane Mastic ADS 650/ADS 650B

G. Coat 2 – Semigloss Thermoset Fluoropolymer: Minimum DFT 1.5, Maximum DFT 2.0
   1. Tnemec Series 1071 Fluoronar
   2. PPG - Coraflon ADS

PART 3 - EXECUTION

EXAMINATION

Examine substrates and conditions under which coatings will be applied for compliance with requirements on applying coatings and painting in accordance with the Contract Documents and manufacturer's recommendations. Surfaces to receive coatings must be thoroughly dry before coatings are applied.

Report any unsatisfactory conditions in writing.

Do not proceed with coating application until unsatisfactory conditions have been corrected.

Start of application will be construed as the Applicator's acceptance of surfaces within that particular area.

Coordinating Work: Review existing painted surface preparation procedures and surface residue to ensure compatibility of the systems for substrates. On request, furnish information on the characteristics of specified finish materials to ensure compatible primers.

Notify the Architect of problems anticipated using the coatings specified over substrates where existing paint coatings remain.

PREPARATION

General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already in place that are not to be coated, or provide surface-applied protection prior to surface preparation and coating. Remove these items, if necessary, to completely coat the items and adjacent surfaces. Following the coating operations in each space or area, have removed items reinstalled by workers skilled in the trades involved.

Cleaning: Before applying coatings or other surface treatments, clean the substrates of substances that could impair bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and coating application so dust and other contaminates from the cleaning process will not fall on wet, newly coated surfaces.

Surface Preparation: Clean and prepare surfaces to be coated according to the manufacturer's instructions for each particular substrate condition and as specified. Provide barrier coats over incompatible existing paint coatings, or remove and reprime.

Notify the Architect in writing of problems anticipated when using the specified finish-coat material with substrates where existing paint coatings are allowed to remain.

Cementitious Surfaces: Prepare concrete, concrete masonry block, cement plaster, and similar surfaces to receive special coatings. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents in accordance with ASTM D 4258 and ASTM D 4261. Roughen, as required, to remove glaze in accordance with ASTM D 4259. If hardeners or sealers have been used to improve concrete curing, use mechanical methods to prepare surface.

Use abrasive blast-cleaning methods if recommended by the coating system manufacturer.

Determine alkalinity and moisture content of surfaces to be coated by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish coats to blister and burn, correct this condition before application. Do not apply coatings over surfaces where the moisture content exceeds that permitted in the manufacturer's printed directions.

Ferrous Metal: Clean ungalvanized ferrous metal surfaces; remove oil, grease, dirt, loose mill scale and other foreign substances. Use solvent or mechanical cleaning methods that comply with the recommendations of the Steel Structures Painting Council.

Clean and prepare surface profile in accordance with applicable SSPC specifications: SSPC-SP 2 Hand Tool Cleaning, SSPC-SP 3 Power Tool Cleaning, SSPC-SP 6 Commercial Blast Cleaning,

SSPC-SP 7 Brush off Blast Cleaning, SSPC-SP 10 Near-White Blast Cleaning, and SSPC-SP 11 Power Tool Cleaning to Bare Metal.

Minimum degree of surface preparation for each coating system shall be as indicated in the schedule by the applicable SSPC specifications number, the lead based paint abatement specification Section 09800, and in the drawings.

Where no SSPC specification number is indicated, prepare surfaces in accordance with SSPC-SP 2 Hand Tool Cleaning or SSPC-SP 3 Power Tool Cleaning.

Before hand or power tool cleaning, remove visible oil, grease, soluble welding residue, and salts by SSPC-SP 1 Solvent Cleaning. After hand or power tool cleaning, reclean surfaces if necessary.

Nonferrous Metal Surfaces: High pressure wash/water blast clean previously painted galvanized surfaces according to the manufacturer's instructions for the application required.

MIXING AND THINNING

Remove and discard any skin formed on surface of coatings in containers. Discard any containers where skin comprises two percent or more of the remaining material.

Combine multi-component paints in quantities needed for use within the manufacturer's recommended pot life at the anticipated application temperatures. Discard remaining mixed material after pot life has expired.

Do not add thinner except as specifically recommended (not merely permitted) by the coating manufacturer for proper coating application under the circumstances prevailing at the project site when application equipment recommended by the coating manufacturer is employed. Use only the quantities and the types of thinner recommended.

Mix materials using mechanical mixers in accordance with coating manufacture's instructions. Agitate mixed materials during application if recommended by manufacturer.

Strain pigmented coatings after mixing except where mechanical application equipment is provided with effective strainers.

Tinting: Except where coating materials cannot be tinted, tint each successive coat of paint a sufficiently contrasting color to facilitate identification of complete coating coverage.

APPLICATION

General: Apply coatings by brush, roller, spray, squeegee, or other applicators according to the manufacturer's recommendations, and using application method best suited for obtaining full, uniform coverage of surfaces to be coated. Use brushes best suited for the material being applied. Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

Do not apply coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.

Coating colors, surface treatments, and finishes are indicated in the Schedules.

Provide finish coats compatible with the primers used.

Employ only application equipment that is clean, properly adjusted, in good working order, and of the type recommended by the coating manufacturer.

Apply successive coats after adequate cure of the preceding coat and within the recommended recoating time.

The number of coats and film thickness required is the same regardless of the application method.

Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Where sanding is required, according to the manufacturer's directions, sand between applications to produce a smooth, even surface.

When undercoats or other conditions show through the final coat, apply additional coats until the cured film has a uniform coating finish, color, and appearance. Give special attention to edges, corners, crevices, welds, exposed fasteners, and similar surfaces to ensure that they receive a dry film thickness equivalent to that of flat surfaces.

The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.

Coat surfaces behind movable equipment and furniture the same as similar exposed surfaces.

Coat the back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

Mechanical and Electrical Items:

Paint electrical items exposed to view.
Paint mechanical items exposed to view.
Paint the following mechanical items:
- Piping and supports.
- Ducts and insulation.
- Others as indicated on drawings.

Paint the following electrical items:
- Conduit and fittings.
- Panel enclosures.
- Others as indicated on drawings.

Scheduling Coating: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for coating as soon as practicable after preparation and before subsequent surface deterioration. Minimum recoating time shall comply with coating manufacturer's environmental cure chart for specific product.

Allow sufficient drying time between successive coats. Do not recoat until the coating has dried so it feels firm and does not deform or feel sticky under moderate thumb pressure and where applying another coat does not cause the undercoat to lift or lose adhesion.

Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.

Brushes: Use brushes best suited for the material applied.

Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

Spray Equipment: Use spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

Film Thickness: Apply each coat to achieve the dry film mil (DFM) thickness per coat recommended by manufacturer or indicated in the schedule at the end of this section, which ever is thicker. Application rates of excess thickness and fewer numbers of coats than specified will not be accepted.

The dry film mil thickness shown in the schedule are per each coat, unless otherwise specified.

Where a single thickness is specified, the dry film thickness actually applied, when measured at any point, shall be equal to the specified value plus or minus 10 percent.

Prime, First or Bottom Coats:

Either before or after applying prime coat or first coat, but before applying successive coats, stripe paint edges, corners, mechanical fasteners, and welds using specified primer or first coat material.
Before applying successive coats, touch up connections, fasteners, and damaged areas using specified primer.

Where first coat shows signs of suction spots or poorly sealed areas, reapply first coat material to adequately seal surface before proceeding with intermediate and top coats.

Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to the material required to be coated or finished that has not been prime-coated by others.

Brush Application: Brush-out and work brush coats into surfaces in an even film. Eliminate cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Neatly draw glass lines and color breaks.

Apply primers and first coats by brush unless the manufacturer's instructions permit using mechanical applicators.

Mechanical Applications: Use mechanical methods to apply coating when permitted by the manufacturer's recommendations and governing regulations.

Wherever using spray application, apply each coat to provide the equivalent hiding of brush-applied coats. Do not double-back with spray equipment building-up film thickness of two coats in one pass, unless recommended by the manufacturer.

Miscellaneous:

Completed coatings shall be free of defects such as runs, sags, lap or brush marks, holidays and skips.

Apply coatings according to the schedule at the end of this section and as otherwise indicated. Coat all similar surfaces not specifically mentioned unless specifically exempted.

Apply coatings to match approved mockups.

Completed Work: Match approved samples for color, texture and coverage.

Remove coatings not in compliance with this specification, reclean and reprepare surfaces as specified, and apply coatings to comply with the contract documents.

FIELD QUALITY CONTROL

The Owner reserves the right to invoke product testing procedures at any time and as often as the Owner deems necessary during coating operations.

If results show materials being used do not comply with requirements, the Contractor may be directed to stop work and remove noncomplying materials, pay for testing, recoat surfaces coated with rejected materials, or remove rejected materials from previously coated surfaces if, upon recoating with specified materials, the two coatings are not compatible.

CLEANING

Cleanup: At the end of each work day, remove rubbish, empty cans, rags, and other discarded materials from the site.

After completing work, clean glass and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

PROTECTION

Protect work against damage until fully cured from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as acceptable to the Architect. Leave in an undamaged condition.

Provide "Wet Paint" signs to protect newly coated finishes until surfaces are adequately cured.

Shortly before final completion of the project, examine surfaces for damage to coatings and restore coatings to new, undamaged condition. Touch up of minor damage will be acceptable where, in the opinion of the Architect, result is not visibly different from surrounding surfaces. Recoat entire surface where result is different either in color, sheen, or texture.

SPECIAL COATING AND PAINTING SCHEDULE

Provide the following coating systems for areas and substrates indicated (subject to specified performance criteria).

Coating System Number One:

Area: Previously painted exterior stucco, masonry, precast and cast in place concrete, screen and parapet walls, ceilings, and walls below loading dock and canopy roofs.

Surface Preparation:

NACE RP-01-72 Water blasting and hand sanding SSPC-SP 2 hand tool cleaning
SSPC-SP 1 Solvent cleaning or power wash
SSPC-SP2 Hand tool cleaning/hand sanding
SSPC-SP3 Power tool cleaning rusted areas

Concrete, Stucco, and Masonry Primer: (previously painted) Acrylic resin primer for exterior surfaces. Two finish coats over primer, as recommended by manufacturer.

BASF	Thoro Primer 2K
PPG Industries	4-809 Perma Crete Masonry Sealer

Concrete Intermediate Coat 1 - Waterborne Acrylic: Minimum WFT (wet film thickness) 14

BASF	Thorosheen
PPG Industries	6-900 Speedhide Exterior Acrylic Semigloss Paint

Concrete Finish Coat 2 - Waterborne Acrylic: Minimum WFT (wet film thickness) 14

BASF	Thorosheen
PPG Industries	6-900 Speedhide Exterior Acrylic Semigloss Paint

Minimum Total DFT: 7-8 mils.

END OF SECTION 09830