

**PART 2 – Not used**

**PART 3 – Not used**

**END OF SECTION**



## SECTION 01010

### SCOPE OF WORK PAINTING of SPORTS FACILITY BUILDINGS

The project includes the painting the exterior of all the facilities

#### 1.01 DESCRIPTION

- 1.1 Finish all exterior surfaces exposed to view, unless fully factory finished and unless otherwise indicated, including the following
- 1.2 In finished areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hanger, brackets, collards, and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
- 1.3 This is a turnkey project "NO CHANGE ORDERS" Contractor is to use the mandatory pre-bid meeting to identify any deficiencies and include them in the bid pricing.
- 1.4 This is the complete painting of the facility exteriors with predetermined Sherwin Williams's products or equivalent approved by owner, Colors must be owner approved.
- 1.5 Contractor is responsible for getting as well as meeting all Permitting requirements, OSHA Regulations, Code, Rules and regulations that are required to complete this project.
- 1.6 Contractor must ensure that all staff and sub-contractors are dressed in company uniforms while on job site and work at the City of Key West facilities.
- 1.7 Contractor is responsible for moving, storing and safe guarding any furniture or items that are in the work area. Upon completion of work in each area the furniture or items will be returned to their original location.
- 1.8 Work in general includes surface preparation, surface repairs, caulking, sealant, patching and application of the paint coating to the substrates and systems outlined in the specifications. It is the intent of the specifications that all surfaces (except those specifically noted otherwise) be painted or finished for a thoroughly complete job in every item is herein specified or not.
- 1.9 All work done on sight must be coordinated and supervised by the city of key west Parks and recreation manager.
- 1.10 Paint all doors front back and sides along with door jams.
- 2.00 Remove any fixtures and plates paint behind and reinstall the fixtures and plates.
- 2.01 Restore all surfaces to the original pre project condition (i.e.) clean up any over spray, drippings, splatter or debris.

- 2.1 Do not paint or finish the following items

- A . Items fully factory- finished unless specifically so indicated: materials and products having factory-applied primers are not considered factory finish
- B. Item indicated to receive other finished
- C. Item indicated to remain unfinished
- D. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment
- E. Floors unless specifically so indicated
- F. Glass
- G. Concealed pipes, ducts and conduits

**SECTION 01014**  
**PROTECTION OF THE ENVIRONMENT**

**PART 1 GENERAL**

**1.1 GENERAL**

- A. The Contractor shall maintain all work areas within and outside the project boundaries free from environmental pollution, which would be in violation to any federal, state, or local regulations.
- B. The work specified in this Section consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as necessary.
- C. Temporary erosion controls include, but are not limited to, grassing, mulching, watering, and reseeding on-site surfaces and spoil and borrow area surfaces and providing interceptor ditches at ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the OWNER.
- D. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the OWNER.
- E. CONTRACTOR is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

**1.2 PROTECTION OF AIR QUALITY**

- A. The air pollution likely to occur due to construction operations shall be minimized by wetting down bare soils during windy periods, requiring the use of properly operating combustion emission control devices on construction vehicles and equipment used by contractors, and by encouraging the shutdown of motorized equipment not actually in use.
- B. Trash burning will not be permitted on the construction site.
- C. Contractor shall provide dust control for any asphalt / concrete removal.

**1.3 CONSTRUCTION NOISE CONTROL**

- A. The Contractor shall conduct all his work, use appropriate construction methods and equipment, and furnish and install acoustical barriers, all as necessary so that no noise emanating from the process or any related tool or equipment will exceed legal noise levels, as set forth in the Code of Ordinances, City of Key West, Florida.

**1.4 MITIGATION OF CONSTRUCTION NOISE IMPACT**

- A. The Contractor shall submit to the Owner his plans to mitigate the construction noise impacts and to comply with the noise criteria specified herein, including the method of construction, the equipment to be used, and acoustical treatments if necessary.

**1.5 PAYMENT**

- A. Payment for the work associated with this Section will be incidental to the contract.

PART 2 – Not used

PART 3 – Not used

**END OF SECTION**

**SECTION 01300**  
**SUBMITTALS**

**PART 1 - GENERAL**

**1.1 GENERAL**

- A. **Inquiries:** Direct to OWNER regarding procedure, purpose, or extent of Submittal.
- B. **Submittal Submission Procedures:** As provided in General Conditions, as specified herein, and as may otherwise be established during the preconstruction conference.
- C. **OWNER's Authorization:** At any time, OWNER may authorize changes to procedures and requirements for Submittals, as necessary to accomplish specific purpose of each Submittal. Such authorization will be by Field Order or Work Change Directive.
- D. **Timeliness:** Make submissions in accordance with requirements of individual Specification sections, as shown on the current accepted schedule of Submittals submissions, and in such sequence as to cause no delay in Work or in work of other contractors.
- E. **Identification of Submittals:**
  - 1. Complete, sign, and transmit with each Submittal package, one Transmittal of CONTRACTOR's Submittal Form attached at the end of this section.
  - 2. Identify each Submittal with numbering and tracking system reviewed by OWNER:
    - a. Sequentially number each Submittal.
    - b. Resubmission of a Submittal will have original number with sequential alphabetic suffix.
  - 3. Show date of submission and dates of previous submissions.
  - 4. Show Project title and OWNER's contract identification and contract number.
  - 5. Show names of CONTRACTOR, Subcontractor or Supplier, and manufacturer as appropriate.
  - 6. Identify, as applicable, Contract Document section and paragraph to which Submittal applies.
  - 7. Clearly identify revisions from previous submissions.
- F. **Incomplete Submittal Submissions:**
  - 1. At OWNER's sole discretion, OWNER will either (i) return the entire Submittal for CONTRACTOR's revision/correction and resubmission, or (ii) retain portions of the Submittal and request submission/resubmission of specified items or as noted thereon.

2. Submittals which do not clearly bear CONTRACTOR's specific written indication of CONTRACTOR review and approval of Submittal or which are transmitted with an unsigned or uncertified submission form or as may otherwise be required under Contract Documents, will be returned to CONTRACTOR unreviewed for resubmission in accordance with Contract Documents.
3. Delays, re-sequencing or other impact to Work resulting from CONTRACTOR's submission of unchecked or unreviewed, Incomplete, inaccurate or erroneous, or nonconforming Submittals, which will require CONTRACTOR's resubmission of a Submittal for OWNER'S review, shall not constitute a basis of claim for Adjustment in Contract Price or Contract Times.

G. Non-specified Submissions: Submissions not required under these Contract Documents will not be reviewed and will be returned to CONTRACTOR.

H. Transmit submittals in accordance with current accepted schedule of Submittal submissions, and deliver the Owner designated by the COMMUNITY SERVICES Department of the City of Key West OWNERS REPRESENTATIVE.

I. Disposition of Submittals: As specified herein for administrative Submittals. OWNER will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:

1. No Exceptions Taken.
2. Reviewed as Noted:
  - a. Reference the General Conditions for intent.
  - b. CONTRACTOR may proceed to perform Submittal related Work.
  - d. One copy for OWNER'S file.
  - e. One copy returned to CONTRACTOR.
3. Revise and Resubmit (Revise/Correct or Develop Replacement and Resubmit):
  - a. Revise/correct in accordance with OWNER'S comments and resubmit.
  - b. One copy to OWNER'S file.
  - c. One copy returned to CONTRACTOR appropriately annotated.

J. Payment for the work in this section will be incidental

**PART 2 - Not used**

**PART 3 - Not used**

**END OF SECTION**

**SECTION 01390**  
**RECORDINGS PRECONSTRUCTION AUDIO-VIDEO**

**PART 1 – GENERAL**

**1.1 REQUIREMENTS**

- A. The Contractor shall provide a color audio-video recording showing the entire preconstruction site. All videos shall be taken by a video photographer. The video photographer shall be an established enterprise that routinely provides these services. The videos shall be in DVD format or .wav files on removable USB drive, indicating the date, project name, and a brief description of the location where the video was taken. The Contractor shall submit one (1) copy of the preconstruction audio-video to the OWNER.
- B. No construction shall begin prior to the review and approval of the preconstruction audio-video tape by the OWNER.
- C. The total audio-video recording system and the procedures employed in its use shall be such as to produce a finished product that will fulfill the technical requirements of the project. The video portion of the recording shall produce bright sharp, and clear pictures with accurate colors and shall be free from distortion, and any other form of picture imperfection. All video recordings shall, by electronic means, display on the screen the time of day, the month, day, and year of the recording.

**PART 2 – PRODUCTS (Not used)**

**PART 3 – EXECUTION**

**3.1 GENERAL**

- A. The following shall be included with the audio-video documentation:
  - 1. Coverage is required within and adjacent to the right of way, easements, storage, and staging areas where the work is to be constructed.
  - 2. Documentation of the conditions of the adjacent properties or any affected structures as a result of the impending construction.
  - 3. Videos shall be properly identified by project name. Video shall include direction of coverage, the name of the streets or easements, engineering station numbers, date and time of coverage.
    - 3. Provide a written video log to aid in locating any section of the construction site that may be in question.

- B. There will be no separate payment for this preconstruction audio-video recording.  
The cost will be incidental to the contract.

**END OF SECTION**

## **SECTION 01530**

### **BARRIERS**

#### **PART 1 – GENERAL**

##### **1.1 REQUIREMENTS**

- A. Furnish, install, and maintain suitable barriers as required to prevent public entry, and to protect the work, existing facilities, trees, and plants from construction operations; remove when no longer needed, or at completion of work.

##### **1.2 RELATED REQUIREMENTS**

- A. Section 01010 Scope of Work.

#### **PART 2 - PRODUCTS**

##### **2.1 MATERIALS – GENERAL**

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

##### **2.02 FENCING**

- A. Minimum fence height shall be four feet. Open-mesh orange plastic fence shall be used to prohibit entry to the construction zone.

##### **2.03 BARRIERS**

- A. Materials are Contractor's option, as appropriate to serve required purpose.

#### **PART 3 - EXECUTION**

##### **3.01 GENERAL**

- A. Install facilities of a neat and reasonably uniform appearance, structurally adequate for the required purposes.
- B. Maintain barriers during entire construction period.
- C. Relocate barriers as required by the progress of construction.

### 3.02 FENCES

- A. Provide and maintain fences necessary to assure security of the site during construction to keep unauthorized people and animals from the site when construction is not in progress.
- B. Provide additional security measures as deemed necessary and approved by the OWNER.

### 3.03 TREE AND PLANT PROTECTION

- A. Preserve and protect existing trees and plants at site which are designated to remain, and those adjacent to site.
- B. Consult with the OWNER and the City's Urban Forestry Manager and remove agreed-on roots and branches which interfere with construction. Employ a qualified tree surgeon to remove branches and treat cuts. No trees or roots shall be removed without approval and/or a permit issued by the City Tree Commission.
- C. Protect root zones of trees and plants:
  - 1. Do not allow vehicular traffic or parking.
  - 2. Do not store materials or products.
  - 3. Prevent dumping of refuse or chemically injurious materials or liquids.
  - 4. Prevent puddling or continuous running water.
- D. Carefully supervise excavating, grading and filling, and other construction operations, to prevent damage.
- E. Replace, or suitably trim trees and plants designated to remain which are damaged or destroyed due to construction operations.

### 3.04 REMOVAL

- A. Completely remove barricades when construction has progressed to the point that they are no longer needed and when approved by the OWNER.
- B. Repair damage caused by construction. Fill and grade areas of the site to the required evaluations, and clean up the area.

**END OF SECTION**

**SECTION 01700**  
**CONTRACT CLOSEOUT**

**PART 1 – GENERAL**

**1.1 REQUIREMENTS**

- A. Project completion includes substantial completion, final inspection after completion, final cleaning, contractor's closeout submittals, and final adjustment of accounts.

**1.2 SUBSTANTIAL COMPLETION**

- A. When Contractor considers work has reached substantial completion for the project, contractor shall submit to the OWNER the following:
1. Written notice that the work is substantially complete in accordance with Contract Documents.
  2. A list of items yet to be completed or corrected and explanations thereof.
- B. Within a reasonable time upon receipt of such notice, the OWNER will make an inspection, if necessary, to determine the status of completion.
- C. Should the OWNER determine that the Project is not substantially complete?
1. The OWNER will promptly notify the Contractor in writing, giving the reasons thereof.
  2. Contractor shall remedy the deficiencies in the work and send a second written notice of Substantial Completion to the OWNER.
  3. Upon receipt of the second notice, the OWNER will review the work.
- D. When the OWNER finds that the Project is substantially complete, owner will issue a Certificate of Substantial Completion with a tentative list of items to be completed or corrected before final inspection.

**1.3 FINAL INSPECTION AFTER COMPLETION**

- A. When Contractor considers the Project complete with all minor deficiencies completed or corrected, he shall submit written certification that:
1. Contract Document requirements have been met.
  2. Project has been inspected for compliance with Contract Documents.

3. Project has been completed in accordance with Contract Documents.
  4. All minor deficiencies have been corrected or completed and the Work is ready for final inspection.
  5. Project record documents are complete and submitted.
- B. Within a reasonable time upon receipt of such certification, the OWNER will make an inspection to verify the status of completion.
- C. Should the OWNER determine that the work is incomplete or defective?
1. The OWNER will promptly notify the Contractor in writing, listing the incomplete or defective work.
  2. Contractor shall remedy the deficiencies in the work and send a second written certification to the OWNER that the work is complete.
  3. Upon receipt of the second certification, the OWNER will review the Work.
- D. When the OWNER determines that the work is acceptable under the Contract Documents, the Contractor shall provide all closeout submittals.

#### 1.4 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean site; sweep paved areas, rake clean other surfaces.
- C. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

#### 1.5 CONTRACTOR'S CLOSEOUT SUBMITTALS

- A. Project Record Documents
  1. At Contract Closeout, submit documents with transmittal letter containing date, project title, Contractor's name and address, list of documents, and signature of Contractor.
  2. Changes made by Field Order or by Change Order.
- B. Evidence of payment and Release of Liens.

#### 1.6 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the OWNER.
- B. Statement shall reflect all adjustments to the Contract Sum.
  - 1. The original Contract sum.
  - 2. Additions and deductions resulting from:
    - a. Previous change orders or written amendment.
    - b. Allowances
    - c. Unit prices
    - d. Deductions for uncorrected work.
    - e. Deductions for liquidated damages
    - f. Other adjustments
  - 3. Total contract sum as adjusted
  - 4. Previous payments
  - 5. Sum remaining due

**1.7 FINAL AS-BUILT OR RECORD DRAWINGS**

- A. All supplied data collections, as-builts, drawings and files to be compatible with esri ArcGIS 10.2.2 Software. The OWNER's current computing environment consists of *Microsoft SQL Server - Windows 7/Server 2008 - ESRI GIS Platform*.
- B. Interfaces and Integrations:
  - 1. The City of Key West uses a number of software applications critical to its core operation and mission. The proposed mobile asset data collection solution will need to interface or integrate with these existing platforms. - Arc Collector-ArcGIS Online - ArcMap 10.2
- C. Contact Nicholas Osterhoudt, City GIS Manager, at 305-809-3721 with software related questions.

**PART 2 - PRODUCTS (not used)**

**PART 3 - EXECUTION (not used)**

**END OF SECTION**



SECTION 079005  
JOINT SEALERS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Elastomeric joint sealers, backings, bond breakers, fillers, and related materials.
- B. Pre-formed seals and gaskets.
- C. Removal and recaulking of exterior joint sealers at the following locations:
  - 1. Perimeter joints at fenestration elements.
  - 2. Joints at through-wall penetration elements.
  - 3. Control and expansion joints.
  - 4. Lap joints in sheet metal work.
  - 5. Joint sealant at metal-to-metal joints and metal-to-glass joints in storefronts and window assemblies (only if water infiltration testing indicates leakage).

1.02 RELATED SECTIONS

- A. Section 092410 - Portland Cement Plaster Repairing: Patching and repair of defects and damage in existing cement plaster (stucco) work; patching materials.
- B. Section 099000 - Painting and Coating: Surface preparation and field-application of paints and coatings on new and existing surfaces, except exterior cement plaster (stucco).
- C. Section 099723 - Acrylic Waterproof Coating System: Surface preparation and field-application of high-build acrylic waterproof coating system over existing and repaired exterior cement plaster (stucco) surfaces.

1.03 REFERENCE STANDARDS

- A. For requirements relating to reference standards, see Section 014219 - Reference Standards.
- B. American Society for Testing and Materials (ASTM):
  - 1. ASTM C510 -- Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
  - 2. ASTM C639 -- Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants.
  - 3. ASTM C661 -- Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.

4. ASTM C719 -- Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants under Cyclic Movement (Hockman Cycle).
  5. ASTM C790 -- (refer to ASTM C1193).
  6. ASTM C794 -- Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
  7. ASTM C804 -- (refer to ASTM C1193).
  8. ASTM C834 -- Standard Specification for Latex Sealants.
  9. ASTM C919 -- Standard Practice for Use of Sealants in Acoustical Applications.
  10. ASTM C920 -- Standard Specification for Elastomeric Joint Sealants.
  11. ASTM C962 -- (refer to ASTM C1193).
  12. ASTM C1087 -- Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems.
  13. ASTM C1193 -- Standard Guide for Use of Joint Sealants.
  14. ASTM C1248 -- Standard Test Method for Staining of Porous Substrate by Joint Sealants.
  15. ASTM C1382 -- Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints.
  16. ASTM D412 -- Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
  17. ASTM D1004 -- Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
  18. ASTM D1056 -- Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
  19. ASTM D2203 -- Standard Test Method for Staining from Sealants.
  20. ASTM D2240 -- Standard Test Method for Rubber Property Durometer Hardness.
  21. ASTM D2628 -- Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.
- C. U.S. Federal Specifications and Standards (FS):
1. FS TT-S-00227 -- Sealing Compound: Elastomeric Type, Multi-component.
  2. FS TT-S-00230 -- Sealing Compound: Elastomeric Type, Single Component.
  3. FS TT-S-001543 -- Sealing Compound: Silicone Rubber Base.
  4. FS TT-S-001657 -- Sealing Compound: Single Component, Butyl Rubber Based, and Solvent Release Type.

#### 1.04 SUBMITTALS

- A. General:
1. For submittal procedures, refer to Section 01300
- B. Manufacturers' Project Review Services Report: Prior to product selection, manufacturers' technical service staff shall review all exterior joint sealer applications for compliance with manufacturer's recommended design principles, and shall submit report indicating recommendations for changes (if any) and/or limitations of the proposed products and designs.
1. Test Reports: If requested by Architect, include the following:

- a. Results of Laboratory Pre-Construction Testing.
  - b. Results of Field Pre-Construction Testing.
  - c. Manufacturer's recommendations for joint preparation, priming, and joint accessory materials based on test results.
  - d. Manufacturer's recommended installation procedure modifications resulting from field adhesion tests.
- C. Product Data:
- 1. Submit complete list of joint sealers and related materials proposed for use on this project.
    - a. Coordinate with Manufacturers' Project Review Services Report.
  - 2. Submit manufacturer's product data sheet for each product; data shall include sealant chemical characteristics, performance criteria, substrate preparation, limitations, color availability, and primer data.
  - 3. Submit Material Safety Data Sheet for each solvent, primer and sealant material.
- D. Samples:
- 1. Submit color charts for each sealant type for initial selection.
  - 2. Submit standard cured color samples for each sealant type illustrating selected colors.
- E. Manufacturer's Installation Instructions: Submit manufacturer's recommended joint preparation, priming and installation instructions for each joint sealant and backing material.
- 1. Indicate special procedures, surface preparation, perimeter conditions requiring special attention, and warranty requirements.
  - 2. Include instructions for completing sealant intersections when different materials are joined.
  - 3. Include instructions for removing existing sealants and preparing joints for new sealant.

#### 1.05 QUALITY ASSURANCE

- A. Provide single source responsibility for each type of joint materials.
- B. Joint sealant and backing materials shall be compatible with one another, with joint substrate, and with other adjacent materials including finishes.
- C. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten years documented experience.
- D. Applicator Qualifications:
  - 1. Company specializing in performing work of this section with minimum three years documented experience, minimum three successfully completed projects of similar scope and complexity, and approved by manufacturer.
  - 2. Designate one individual as project foreman who shall be on site at all times during installation.

- E. Field Pre-Construction Testing: Test each elastomeric sealant and joint substrate in accordance with the following, before beginning work of this section:
  - 1. Install field samples or mockups using joint preparation methods determined by laboratory pre-construction testing or manufacturer's installation instructions.
    - a. Install field test joints in inconspicuous location as approved by Owner.
  - 2. Remove existing sealant and clean joint using manufacturer's recommended joint preparation methods, and install new sealant in accordance with manufacturer's installation instructions.
  - 3. Test Method: Manufacturer's standard field adhesion test to verify joint preparation and primer required to obtain optimum adhesion of sealants to joint substrate.
  - 4. When test indicates sealant adhesion failure, modify joint preparation, primer, or both and retest until joint passes sealant adhesion test.
- F. Perform work in accordance with ASTM C1193 and manufacturer's installation instructions.
- G. Joint Tolerance: Provide joint tolerances in accordance with product data and manufacturer's installation instructions.

#### 1.06 WARRANTY

- A. Correct defective work within a five year period after Date of Substantial Completion.
- B. Include coverage for replacement of sealants, backing materials and accessories which fail to achieve water tight seal, exhibit loss of adhesion or cohesion, or do not cure.

### PART 2 - PRODUCTS

#### 2.01 MANUFACTURERS

- A. Elastomeric Joint Sealants:
  - 1. BASF Construction Chemicals-Building Systems.
  - 2. Bostick, Inc.
  - 3. Dow Corning Corp.
  - 4. Momentive Performance Materials, Inc (formerly GE Silicones).
  - 5. Pecora Corporation.
  - 6. Tremco Global Sealants
  - 7. Or Approved Equal By Owner.
- B. Pre-formed Foam Seals and Gaskets:
  - 1. Acme Highway Products Corp.
  - 2. Emseal Corp.
  - 3. Illbruck Sealant Systems.
  - 4. Sandell Manufacturing Co., Inc.
  - 5. Watson Bowman Associates inc.
  - 6. Or approved Equal By Owner

#### 2.02 GENERAL

- A. Manufacturer's Recommendations: Only products recommended for the specific application indicated shall be used.

- B. **Single Source Responsibility:** All joint sealer materials for a specific application shall be obtained from a single manufacturer.

- C. **Compatibility:** Joint sealers, backings, bond breakers, fillers, and other related materials shall be provided which are compatible with one another and with joint substrates under the indicated conditions of service and application, as demonstrated by manufacturer's testing and field experience.
- D. **Colors:** Colors of exposed joint sealers shall be provided as indicated or, if not otherwise indicated, as selected by the Owner from manufacturer's standard colors.

## 2.03 ELASTOMERIC JOINT SEALANTS

### A. General:

- 1. Manufacturer's standard chemically curing elastomeric sealant shall be of base polymer indicated which complies with ASTM C920 requirements, including those for Type, Grade, Class and Uses indicated.

### B. Silicone Sealants:

- 1. Sealant Type S-1: One-part, non-acid-curing, low modulus, silicone sealant, meeting the following requirements:
  - a. Compliance Requirements: ASTM C920, Type S, Grade NS, Class 25, Uses NT, M, G, A, and Use O (as applicable to joint substrates indicated).
  - b. Durometer Hardness, Shore A (ASTM C661): 15.
  - c. Tensile Strength (ASTM D412):
    - (1) at 25 percent extension: 15 psi, max.
    - (2) at 50 percent extension: 20 psi, max.
    - (3) at 100 percent extension: 45 psi, max.
  - d. Peel Strength (ASTM C794): 25 lb/in.
  - e. Joint Movement Capability (ASTM C719): +100/-50 percent.
  - f. Staining (ASTM C1248): None.
  - g. Color(s): As selected by OWNER from manufacturer's complete range of not less than 10 colors.
  - h. Product: "Dow Corning 790" by Dow Corning, or equal.
- 2. Sealant Type S-2: One-part, non-acid-curing, medium modulus, silicone sealant, meeting the following requirements:
  - a. Compliance Requirements: ASTM C920, Type S, Grade NS, Class 25, Uses NT, M, G, A, and Use O (as applicable to joint substrates indicated).
  - b. Durometer Hardness, Shore A (ASTM C661): 35.
  - c. Tensile Strength (ASTM D412):
    - (1) at 25 percent extension: 45 psi, max.
    - (2) at 50 percent extension: 60 psi, max.
    - (3) at 100 percent extension: 75 psi, max.
  - d. Peel Strength (ASTM C794): 32 lb/in.
  - e. Joint Movement Capability (ASTM C719): +50/-50 percent.
  - f. Staining (ASTM C1248; concrete, limestone): None.
  - g. Color(s): As selected by OWNER from manufacturer's complete range of not less than 10 colors.

- h. Product: "Dow Corning 795" by Dow Corning, or equal.
- 3. Sealant Type S-3: One-part, acid-curing, silicone sealant.
  - a. Compliance Requirements: ASTM C920, Type S, Grade NS, Class 25, Uses NT, M, G, A, and Use O (as applicable to joint substrates indicated).
  - b. Durometer Hardness, Shore A (ASTM C661): 25.
  - c. Tensile Strength, Ultimate (ASTM D412): 325 psi.
  - d. Tear Strength (ASTM D624): 25 ppi.
  - e. Peel Strength (ASTM C794): 20 lb/in.
  - f. Color(s): As selected by OWNER from manufacturer's complete range of not less than 8 colors.
  - g. Product: "Dow Corning 999-A" by Dow Corning, or equal.
- 4. Sealant Type S-4:
  - a. Compliance Requirements: ASTM C920, Type S, Grade NS, Class 25, Uses NT, G, A and O; non-staining, non-bleeding.
  - b. Color: As selected by OWNER.
  - c. Product: "Dow Corning 999" or "Dow Corning 799" by Dow Corning, or equal.
- 5. Sealant Type S-5: Premium, very-low-modulus, high-movement, non-sag, fast-curing, ready-to-use, solvent-free, silyl-terminated polyether polymer (STPe) sealant; compatible with non-rigid coatings (may be painted soon after installation).
  - a. Compliance Requirements:
    - (1) ASTM C920, Type S, Grade NS, Class 50, Use NT, M, A, G, and O.
    - (2) FS TT-S-001543A, Type II, Class A, Type Non-sag.
    - (3) FS TT-S-00230C, Type II, Class A.
    - (4) COE CRD-C-541, Type II, Class A.
  - b. Physical and Performance Requirements:
    - (1) Movement Capability (ASTM C719): +/-50 percent.
    - (2) Extension (ASTM C1382): 100 percent.
    - (3) 100-percent Modulus (ASTM D412): 35 psi (0.24 MPa).
    - (4) Tensile Strength (ASTM D412): 140 to 180 psi.
    - (5) Tear Strength (ASTM D1004): 40 lb/in (7.1 kg/cm).
    - (6) Ultimate Elongation at Break (ASTM D412): 800 to 1,000 percent.
    - (7). Sag in Vertical Displacement (ASTM C639): No sag.
    - (8) Hardness, Shore A (ASTM C661): 17.
    - (9) Stain and Color Change (ASTM C510): Pass (no visible stain).
    - (10) Bond Durability (ASTM C719): Pass (on glass, aluminum, concrete; +/- 50 percent).
    - (11) Adhesion, in peel (ASTM C794):
      - (a) Aluminum: 35 pli (6.2 kg/cm).
      - (b) Glass: 33 pli (5.8 kg/cm).
      - (c) Concrete: 36 pli (6.4 kg/cm).
  - c. Product: "MasterSeal NP 150" (formerly "Sonolastic 150 VLM") by BASF, or equal.
- 6. Sealant Type S-6:
  - a. Compliance Requirements: ASTM C920, Type S, Grade NS, Class 50, Uses NT, M, G, A and O; non-staining, non-bleeding.

- b. Color: As selected by OWNER.
  - c. Product: "Dow Corning CC5" by Dow Corning, or equal.
7. Sealant Type S-7: Single-component, ready to use, silicone rubber sealant with integral fungicide; recommended by manufacturer for use in bathrooms, spas and similar applications where joints need protection against fungi and bacteria
    - a. Compliance Requirements: ASTM C920, Type S, Grade NS, Class 25, Uses NT, G, A and O; mildew resistant.
    - b. Durometer Hardness, Shore A (ASTM C661): 25.
    - c. Tensile Strength, Ultimate (ASTM D412): 325 psi.
    - d. Tear Strength (ASTM D624): 25 ppi.
    - e. Peel Strength (ASTM C794): 20 lb/in.
    - f. Color: White.
    - g. Product: "Dow Corning 786 Sealant M White" by Dow Corning, or equal.
  8. Sealant Type S-8: Low modulus, high performance, single component; gun grade, as appropriate; sealant.
    - a. Color: As selected by Architect.
    - b. Product: "Dow Corning 888" or "Dow Parking Sealant NS" by Dow Corning, or equal.
  9. Sealant Type S-9: Two-part, self-leveling, non-acid curing, silicone sealant.
    - a. Compliance Requirements: ASTM C920, Type M, Grade NS, Class 25, Uses T, M, and Use O (as applicable to joint substrates indicated).
    - b. Durometer Hardness, Shore 00 (ASTM C661): 60.
    - c. Tensile Strength, Ultimate (ASTM D412): 75 psi.
    - d. Joint Movement Capability (ASTM C719): +100/-50 percent.
    - e. Color: Gray, except as otherwise indicated.
    - f. Product: "Dow Corning Parking Sealant FC" by Dow Corning, or equal.
  10. Sealant Type S-10: Low modulus, high performance, single component; self leveling, as appropriate; sealant.
    - a. Compliance Requirements:
      - (1) ASTM D5893 Type SL.
    - b. Durometer Hardness, Shore 00 (ASTM C661): 41 to 50.
    - c. Joint Movement Capability (ASTM C719): +100/-50 percent.
    - d. Color: Gray, except as otherwise indicated.
    - e. Product: "Dow Corning 890" or "Dow Parking Sealant SL" by Dow Corning, or equal.
- C. Urethane Sealants:
1. Sealant Type U-1:
    - a. Compliance Requirements: ASTM C920, Type M, Grade NS, Class 50, Use T, M, A, O, and I (Class 2); non-staining, non-bleeding.
    - b. Color: As selected by OWNER.
    - c. Product: "Dymeric 240FC": by Tremco, or equal.
  2. Sealant Type U-2: Two-part, non-sag, urethane sealant for Use T.
    - a. Compliance Requirements: ASTM C920, Type M, Grade NS, Class 25, Uses T, M, A, and Use O (as applicable to joint substrates indicated).
    - b. Product: "Dynatred" by Pecora, or equal.

3. Sealant Type U-3:
    - a. Compliance Requirements: ASTM C920, Type M, Grade P, Class 25, Use T, M, and O; non-staining.
    - b. Color: As selected by OWNER.
    - c. Product: "THC-900/THC-901" by Tremco, or equal.
  4. Sealant Type U-4:
    - a. Compliance Requirements: ASTM C920, Type S, Grade P, Class 50, Use T, M, A, O, and I (Class 2); non-staining, non-bleeding.
    - b. Color: As selected by OWNER.
    - c. Product: "Vulkem 45 SSL" by Tremco, or equal.
  5. Sealant Type U-7: One-part, high-performance, moisture-cure, polyurethane sealant.
    - a. Compliance Requirements:
      - (1) ASTM C920, Type S, Grade NS, Class 35, Use NT, M, A, and O.
      - (2) FS TT-S-00230C, Class A, Type I.
    - b. Physical and Performance Requirements:
      - (1) Movement Capability (ASTM C719): +/-35 percent.
      - (2) Hardness, Shore A (ASTM C661): 25.
      - (3) Stain and Color Change (ASTM C510): Pass (no visible stain).
      - (4) Adhesion, in peel (ASTM C794): 30.
    - c. Product: "Sonolastic NP 1" by BASF, or equal.
  6. Sealant Type U-8: One-part, low-modulus, silane end-capped, moisture-cure, polyurethane hybrid sealant.
    - a. Compliance Requirements:
      - (1) ASTM C920, Type S, Grade NS, Class 35, Use NT, M, A and O.
      - (2) FS TT-S-00230C, Class A, Type II.
    - b. Physical and Performance Requirements:
      - (1) Movement Capability (ASTM C719): +/-35 percent.
      - (2) Hardness, Shore A (ASTM C661): 25.
      - (3) Stain and Color Change (ASTM C510): Pass (no visible stain).
      - (4) Adhesion, in peel (ASTM C794):
        - (a) Aluminum: 20-25 pli (89-112 N).
        - (b) Concrete: 18-22 pli (80-98 N).
    - c. Product: "Dymonic FC" by Tremco, or equal
- D. Other Sealants:
1. Sealant Type A-1: ASTM C834 single-component water-based siliconized acrylic-latex caulk for use in general purpose interior applications.
    - a. Product: BASF Sonolac, or equal.
  2. Sealant Type L-1: Highly elastic, latex sealant for sound-rated partition and ceiling systems; compatible with gypsum board, cementitious backer board, and metal stud framing system components.
    - a. Shall provide excellent adherence, permanent flexibility, and lasting seal.
    - b. Shall meet or exceed ASTM C919 and ASTM C834.
    - c. Acceptable Product: USG SHEETROCK® acoustical sealant; for additional requirements, refer to Section 092116 - Gypsum Board Assemblies.

## 2.04 PRE-FORMED SEALS AND GASKETS

- A. Pre-formed Foam Sealant: Manufacturer's standard preformed, pre-compressed, impregnated open-cell foam sealant manufactured from high-density urethane foam impregnated with a nondrying, water repellent agent; factory-produced in pre-compressed sizes and in roll or stick form to fit joint widths indicated and to develop a watertight and airtight seal when compressed to the degree specified by the manufacturer. Provide products which are permanently elastic, mildew-resistant, non-migratory, non-staining, compatible with joint substrates and other joint sealers, and comply with the following requirements:
  - 1. Impregnating Agent: Manufacturer's standard
  - 2. Density: Manufacturer's standard
  - 3. Backing: Pressure sensitive adhesive, factory applied to one side, with protective wrapping or coated on one face with release agent serving as bond breaker for primary joint sealant.
- B. Pre-formed Hollow Neoprene Gasket: Manufacturer's standard preformed polychloroprene elastomeric joint seal of the open-cell compression type complying with ASTM D2628 and with requirements indicated for size, profile and cross-section design.

## 2.05 BACKING AND BOND BREAKER MATERIALS

- A. General:
  - 1. Provide sealant backings of material and type which are:
    - a. Non-staining.
    - b. Compatible with joint substrates, sealants, primers and other joint fillers.
    - c. Approved by sealant manufacturer for applications indicated.
- B. Backup strip shall be a flexible and compressible type of closed cell foam polyethylene, butyl rubber, rounded at surface to contact sealant, conforming to sealant manufacturer's installation instructions.
  - 1. Backup strip must fit neatly into the joint without compacting and to such a height to allow a sealant depth of 1/2 the width of the joint.
  - 2. Sealant must not bond to the backup material.
- C. Plastic Foam Joint-Fillers: Pre-formed, compressible, resilient, non-waxing, non-extruding strips of plastic foam of either flexible, open cell polyurethane foam or non-gassing, closed-cell polyethylene foam, subject to sealant manufacturer's approval; and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- D. Elastomeric Tubing Joint Fillers: Neoprene, butyl, silicone or EPDM tubing complying with ASTM D1056, non-absorbent to water and gas, capable of remaining resilient at temperatures down to minus 26 degrees F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth and otherwise contribute to optimum sealant performance.
- E. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by the sealant manufacturer for preventing bond between sealant and joint filler or other

materials at the back or third surface of the joint. Provide self-adhesive tape where applicable.

## 2.06 ACCESSORIES

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

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

### 3.02 PREPARATION

- A. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- B. Removal of existing joint sealants:
  - 1. Remove sealant at existing exterior joints, including but not limited to the following locations:
    - a. Control and expansion joints in paving.
    - b. Exterior wall expansion joints.
    - c. Control and soft joints in masonry, and between masonry and adjacent work.
    - d. Lap joints in exterior sheet metal work.
    - e. Joints between exterior metal frames and adjacent work.
  - 2. If water infiltration testing indicates leakage at storefronts, remove existing sealant/gasket at the following locations:
    - a. Metal-to-metal joints in storefronts.
    - b. Metal-to-glass joints in storefronts.
  - 3. At locations where existing joint sealant is to be removed, do so in accordance with sealant manufacturer's recommended procedures.
- C. Surface Cleaning of Joints: All joints shall be cleaned out immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:
  - 1. All foreign material shall be removed 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) oil; grease; waterproofing; water repellents; water, and surface dirt.
  - 2. Concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces shall be cleaned by brushing, grinding, blast cleaning, mechanical abrading, acid washing or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Loose particles remaining from the above cleaning operations shall be removed by vacuuming or blowing out joints with oil-free compressed air.
  - 3. Laitance and form release agents shall be thoroughly removed from all concrete

surfaces.

4. Metal, glass, porcelain enamel, glazed surfaces of ceramic tile and other nonporous surfaces shall be cleaned with chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.
- D. Joint Priming:
1. Clean and prime joints in accordance with manufacturer's instructions.
  2. Joint substrates shall be primed where indicated or where recommended by joint sealer manufacturer. Primer shall be applied so as to comply with joint sealer manufacturer's recommendations. Primers shall be confined to areas of joint sealer bond. Spillage or migration onto adjoining surfaces shall not be allowed.
- E. Protect elements surrounding the work of this section from damage or disfigurement.
1. Masking tape shall be used 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. Tape shall be removed immediately after tooling without disturbing joint seal.

### 3.03 INSTALLATION

- A. General:
1. Unless otherwise indicated, comply with joint sealer manufacturers' printed installation instructions.
    - a. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
  2. Perform installation in accordance with ASTM C1193.
  3. Perform acoustical sealant application work in accordance with ASTM C919.
  4. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
  5. Install bond breaker where joint backing is not used.
  6. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
  7. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
  8. Tool joints concave.
- B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C962 for use of joint sealants as applicable to materials, applications and conditions indicated.
- C. Solvent-Release-Curing Sealant Installation Standard: Comply with requirements of ASTM C804 for use of solvent-release-curing sealants.
- D. Latex Sealant Installation Standard: Comply with requirements of ASTM C790 for use of latex sealants.
- E. Acoustical Sealant Application Standard: Comply with recommendations of ASTM C919 for use of joint sealants in acoustical applications as applicable to materials, applications and conditions indicated.

- F. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
  - 1. Install joint-fillers of the types indicated to provide support of sealants during application and at position necessary to produce the required cross-sectional shapes and depths.
    - a. Do not leave gaps between ends of joint-fillers.
    - b. Do not stretch, twist, puncture or tear joint-fillers.
    - c. Remove absorbent joint-fillers which have become wet prior to sealant application and replace with dry material.
  - 2. 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.
  - 3. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint-fillers.
- G. 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.
- H. Tooling of Non-sag 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 which discolor sealants or adjacent surfaces or are not approved by the sealant manufacturer.
  - 1. Concave joint configuration per Figure 6A in ASTM C962, unless otherwise indicated.
- I. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, and complying with sealant manufacturer's directions for installation methods, materials and tools which produce seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant in conformance with sealant manufacturer's recommendations.
- J. Installation of Preformed Hollow Neoprene Gaskets: Install gaskets, with minimum number of end joints, in joint recesses with edges free of spalls and sides straight and parallel, both within tolerances specified by gasket manufacturer. Apply manufacturer's recommended adhesive to joint substrates immediately prior to installing gaskets. For straight sections provide gaskets in continuous lengths; where changes in direction occur, adhesively splice gasket together to provide watertight joints. Recess gaskets below adjoining surfaces by 1/8 inch to 1/4 inch.

### 3.04 PROTECTION AND CLEANING

- A. 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 and reseal joints with new materials to produce installations with repaired areas indistinguishable from original work.

- B. 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.

### 3.05 SEALANT SCHEDULE

#### A. Exterior Joints:

1. Control and Expansion Joints in Concrete Paving:
  - a. Concrete Slab on Grade: Sealant Type U-2 or Sealant Type S-9.
  - b. Elevated Concrete Deck: Sealant Type S-9.
2. Preformed Expansion Joints in Walls: As indicated in drawings.
3. Control, Expansion, and Movement Joints in Cement Plaster: Sealant Type S-5.
4. Control, Expansion, and Movement Joints between Cement Plaster and Adjacent Work: Sealant Type S-5.
5. Joints between Metal Frames and Adjacent Work (except masonry): Sealant Type S-5.
6. Metal-to-Metal Joints (except lap joints in sheet metal work): Sealant Type S-1 or Sealant Type S-2.
7. Lap Joints in Sheet Metal Work: Sealant Type S-1 or Sealant Type S-2.
8. Metal-to-Glass Joints (except joints sealed with dry gasket or tape): Sealant Type S-2.
9. Joints for Which No Other Sealant Type is Indicated: Sealant Type U-8 or Sealant Type S-5.

#### B. Interior Joints:

1. Perimeter Joints between Gypsum Board Wall/Ceiling Finish and Metal Frame (e.g., window frame/trim; storefront framing): Sealant Type U-7.
2. Joints between Metal Stud Track/Runner and Adjacent Construction, and between Outlet Boxes and Gypsum Board: Refer to Concealed Joints.
3. Joints between Plumbing Fixtures and Tile: Sealant Type S-7.
4. Joints between Solid Surface Fabrications (e.g., vanity backsplash) and Tile: Sealant Type S-7.
5. Perimeter Joints between Stucco Wall/Ceiling Finish and Metal Frame (e.g., door frame; window frame; metal storefront; louver) or Steel Framing Member (e.g., steel roof beam): Sealant Type U-7.
6. Perimeter Joints between Tile Wall Finish and Metal Frame (e.g., door frame; window frame; metal storefront):
  - a. Tile to Site Finished Steel Frame (e.g., door frame): Sealant Type U-7.
  - b. Tile to Shop-Finished Aluminum Frame (e.g., storefront): Sealant Type S-1 or Sealant Type S-3.
7. Perimeter Joints between Gypsum Board Wall/Ceiling Finish and Metal Frame (e.g., door frame; window frame; metal storefront): Sealant Type U-7.
8. Joints between Gypsum Board and Quartz Surface Fabrications, Architectural

Woodwork or Cabinetry: Sealant Type U-7.

a. For additional requirements, refer to Section 064100 - Architectural Wood Casework and Section 066100 - Quartz Surface Fabrications.

9. Tile Movement Joints:

a. Floor Tile to Floor Tile: Sealant Type S-5.

b. Floor Tile to Base Tile: Sealant Type S-5.

c. Wall Tile to Wall Tile: Sealant Type S-5.

d. For additional requirements, refer to Section 093013 - Tiling.

10. Joints for Which No Other Sealant Type is Indicated: Sealant Type P-1.

C. Concealed Joints:

1. Concealed Metal Lap Joints (e.g., concealed lap and hook joints in sheet metal flashing and trim): Sealant Type S-1.

2. Concealed Bedding Joints (e.g., joints under metal thresholds and saddles; joints between sheet metal flashing and other materials): Sealant Type P-1.

3. Concealed Acoustical Joints at Interior Stud-Framed Partitions (e.g., joints between metal stud track/runner and adjacent construction; sealant joints between outlet boxes and gypsum board):

a. Dry Areas: Sealant Type L-1.

b. Wet Areas (e.g., restrooms): Sealant Type S-5 or Sealant Type S-7.

.END OF SECTION

SECTION 092410  
PORTLAND CEMENT PLASTER REPAIRING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Portland cement plaster (stucco).
  - 1. Inspection and evaluation of all existing exterior cement plaster work, and documentation of damaged or defective areas.
  - 2. Patching and repair of damaged or defective cement plaster work, including but not limited to the following:
    - a. Cracking.
    - b. Delamination.
    - c. Impact damage.
    - d. Rusted or damaged beads.
- B. Repair mortar.
- C. Metal lath.
- D. Beads, screeds, reveals, control joints, and other plaster accessories.

1.02 RELATED REQUIREMENTS

- A. Section 079005 - Joint Sealers: Removal and replacement of joint sealers, backing and bond breakers; joint sealer for stucco crack repair.
- B. Section 099000 - Paints and Coatings: Surface preparation and repainting of exterior surfaces; crack repair materials for stucco crack repair.
- C. Section 099723 - Acrylic Waterproof Coating System.

1.03 REFERENCE STANDARDS

- A. American Concrete Institute (ACI):
  - 1. ACI 524 -- Guide to Portland Cement Plastering.
- B. American Society for Testing and Materials (ASTM):
  - 1. ASTM C91 -- Standard Specification for Masonry Cement.
  - 2. ASTM C150 -- Standard Specification for Portland Cement
  - 3. ASTM C847 -- Standard Specification for Metal Lath.
  - 4. ASTM C897 -- Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters.

5. ASTM C926 -- Standard Specification for Application of Portland Cement-Based Plaster.
  6. ASTM C932 -- Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering.
  7. ASTM C1063 -- Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
  8. ASTM C1116 -- Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
  9. ASTM C1328 -- Specification for Plastic (Stucco) Cement.
  10. ASTM D1784 -- Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
  11. ASTM D4216 -- Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly(Vinyl Chloride) (CPVC) Building Products Compounds.
- C. Florida Building Code, 2010 edition (FBC):
1. FBC-B -- Florida Building Code, Building (including 2012 Supplement).
- D. Portland Cement Association (PCA):
1. PCA EB049 -- Portland Cement Plaster/Stucco Manual.
- E. The Society for Protective Coatings (SSPC):
1. SSPC-SP 2 -- Hand Tool Cleaning.
  2. SSPC-SP 3 -- Power Tool Cleaning.

#### 1.04 SUBMITTALS

- A. General:
1. For submittal procedures, refer to Section 01300
- B. Product Data: Submit manufacturer's product data for each product to be used, including but not limited to premixed cement plaster and patching stucco/cement plaster, integral bonding admixture, lath and plaster accessories.
1. Include manufacturer's written specifications, proportion mixes, and installation instructions for factory-prepared materials.
    - a. Manufacturer's written specifications shall include physical and performance characteristics, and instructions for storage, handling, and use.
  2. Provide documentation certifying that materials used together are mutually compatible (e.g., integral bonding admixture and premixed cement plaster).
  3. If requested, provide Material Safety Data Sheets.

#### 1.05 QUALITY ASSURANCE

- A. Installer/Applicator Qualifications: Company specializing in performing the work of this section with minimum five years of documented experience.
- B. Contractor shall not change source or manufacturer of cement plaster materials during the course of the work.

- C. Warranty: Contractor shall provide a written warranty against defects in material and installation for a period of not less than ten (10) years.

#### 1.06 MOCK-UPS

##### A. General:

1. Contractor shall prepare mock-up installations illustrating each type of cement plaster repair work to be performed.
    - a. Special tooling and texturing necessary to match existing finish is to be included.
    - b. If cleaning tests are also to take place, test panels should be prepared on the same area as mock-up.
  2. Where mock-up is deemed by Owner to be not in conformance with design intent, Contractor shall prepare additional mock-up(s) at no additional cost to Owner as necessary to achieve Owner's approval.
  3. Locate mock-ups where directed or as approved by Owner's.
    - a. Mock-ups should not be undertaken on highly visible surfaces, except as authorized by Owner's.
  4. Accepted mock-up(s) shall become part of the Work, and shall serve as the quality standard for subsequent Work.
- B. Mock-up No. 1 – Fine Fissure (hairline) Crack Repair: Construct mock-up of exterior fine fissure repair, 2 ft long, illustrating crack concealment and surface finish match to existing.
- C. Mock-up No. 2 – Linear Static Crack Repair: Construct mock-up of exterior linear static crack repair, 2 ft long, illustrating crack concealment and surface finish match to existing.
- D. Mock-up No. 3 – Large Dynamic Crack Repair: Construct mock-up of exterior wall large dynamic crack repair, 2 ft long, illustrating crack concealment and surface finish match to existing.
- E. Mock-up No. 4 – Delamination Repair: Construct mock-up of exterior wall delamination repair, 2 ft long by 2 feet wide, illustrating surface finish match to existing, and edge interface between new and existing cement plaster.
- F. Mock-up No. 5 – Corner Bead Repair: Construct mock-up of exterior wall corner repair, 2 ft long, illustrating corner finishing, surface finish match to existing, and edge interface between new and existing cement plaster.
- G. Mock-up No. 6 – Reveal Bead Repair: Construct mock-up of exterior wall reveal repair, 2 ft long, illustrating reveal finishing, surface finish(es) match to existing, and edge interface between new and existing cement plaster.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all products to the site in original packaging, unopened, and undamaged with

manufacturer's name and product identification visible thereon, and manufacturer's instructions and Material Safety Data Sheets.

- B. Store products in a dry location and protect them from dampness following manufacturer's instructions.
- C. Stockpile and handle aggregates in a manner to prevent contamination from foreign materials.

## 1.08 FIELD CONDITIONS

- A. Do not apply cement plaster when substrate or ambient air temperature is under 50 degrees F or over 90 degrees F.
- B. Hot Weather Conditions:
  - 1. Use damp loose sand.
  - 2. Use cool water for mixing.
  - 3. Pre-dampen masonry walls prior to application of cement plaster scratch coat.
  - 4. Prevent the cement plaster from drying out by covering with a plastic sheet, or moist cure at least twice daily for the first 2 to 3 days.
  - 5. Do not allow fresh cement plaster to be subject to hot, dry winds.
- C. Protect existing adjacent materials and surfaces during the execution of the work; provide all necessary protection and follow all necessary work procedures to avoid damage to existing material assemblies not a part of the work in the Section:
  - 1. Minimize levels of dust during cement plaster removal and repair operations.
  - 2. Protect open joints and other vulnerable areas from water penetration to prevent leakage during the course of the work. Open areas shall not be left exposed overnight or when inclement weather is predicted.
  - 3. Temporarily remove and store surface-mounted appurtenances (e.g., light fixtures, signs, etc.) during cement plaster and sealant repair work.
  - 4. Protect windows during repair of cement plaster in close proximity to window openings.
  - 5. Protect existing roof surface from damage during the course of the cement plaster rehabilitation work. Repair all damage to roofing, flashings, etc., to the satisfaction of, and at no additional cost to, the Owner.
  - 6. Protect adjacent work from moisture deterioration and soiling due to cement plaster application operations. Provide temporary coverings as required to minimize spattering of cement plaster on other materials.
- D. Provide visible barriers and/or warning tape around the perimeter of the work area for visitor protection and shall provide that nearby vehicles and adjacent structures and foliage are protected from damage during the course of the work.
- E. Coordinate cement plaster work with the other trades involved in exterior rehabilitation work, including but not limited to cleaning, sealing, and painting.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Comply with applicable requirements of governing building code, including but not limited to the following:
  - 1. Lathing and plastering materials shall conform to the standards listed in FBC-B TABLE 2507.2 and FBC-B CHAPTER 35 and, where required for fire protection, shall also conform to the provisions of FBC-B CHAPTER 7.
  - 2. Cement plaster and lathing shall be done with the appropriate materials listed in FBC-B TABLE 2507.2 and FBC-B CHAPTER 35.
- B. Manufacturers:
  - 1. Cement Plaster Materials:
    - a. Titan America LLC; 11000 NW 121 Way; Medley, FL 33178; Tel. 800-226-2057.
  - 2. Integral Bonding Admixture:
    - a. BASF Construction Chemicals LLC.
    - b. Lambert Corporation.
  - 3. Metal Lath:
    - a. Alabama Metal Industries Corporation: [www.amico-online.com](http://www.amico-online.com).
    - b. Clark Steel: [www.clarksteel.com](http://www.clarksteel.com).
    - c. Western Metal Lath, Inc: [www.wmlinc.com](http://www.wmlinc.com).
  - 4. Plaster Beads, Screeds, Reveals and Other Accessories:
    - a. Alabama Metal Industries Corporation: [www.amico-online.com](http://www.amico-online.com).
    - b. Plastic Components, Inc. (PCI): 9051 NW 97 Terrace, Miami, FL 33178; Tel. 305-885-0561.
    - c. Vinyl Corp.: 8255 NE 70 Street; Miami, FL 33166; Tel. 305-477-6464.

## 2.02 STUCCO MATERIALS

- A. Portland Cement Plaster: In accordance with ASTM C926 and applicable requirements of the governing building code.
  - 1. Cement:
    - a. Portland Cement: ASTM C150, Type I.
    - b. Masonry Cement: ASTM C81, Type S.
    - c. Stucco Cement: ASTM C1328, Type S.
  - 2. Aggregate:
    - a. Base Coats: ASTM C897, natural or manufactured sand.
    - b. Finish Coat: Natural or manufactured sand graded to pass the No. 16 (1.18 mm) mesh sieve, light colored.
  - 3. Water: Clean, fresh, cool, potable and free of mineral or organic impurities which can affect cement plaster or metal in the system.
- B. Admixtures:
  - 1. Integral Bonding Admixture: Acrylic-polymer emulsion or ethyl-vinyl acetate (EVA) admix designed to enhance the physical properties, adhesion to substrate, and durability of cement plaster.
    - a. Do not use Integral Bonding Admixture in a plaster mix that already has air entrained.

- b. Do not use Integral Bonding Admixture as a surface-applied external bonding agent or as a primer.
- c. Products: One of the following:
  - (1) "MasterEmaco A660" (formerly "Acryl 60") manufactured by BASF.
  - (2) "Lambco Primer" manufactured by Lambert Products.
- 2. Fibers: 1/2-inch fibers meeting the requirements of ASTM C1116; alkali-resistant.

## 2.03 RELATED MATERIALS

- A. Crack Repair Materials:
  - 1. Patching Material Type 1 or 2, as appropriate for application; for additional information, refer to Section 099000 - Painting and Coating.
  - 2. Patching Material Type 3: Joint Sealant Type S-5; for additional information, refer to Section 079005 - Joint Sealers.
- B. Repair Mortar (Patching Material Type 4): Non-sag, lightweight, one-component, high-strength, polymer-modified, silica-fume-enhanced repair mortar with integral corrosion inhibitor for vertical and overhead applications.
  - 1. Performance Characteristics:
    - a. Compressive Strength (ASTM C109): 6,750 psi (46.5 MPa) at 28 days.
    - b. Modulus of Elasticity (ASTM C215):  $5.6 \times 10^5$  psi (3,861 MPa).
    - c. Splitting Tensile Strength (ASTM C496): 610 psi (4.2 MPa) at 28 days.
    - d. Flexural Strength (ASTM C348): 1,110 psi (7.7 MPa) at 28 days.
    - e. Bond Strength (ASTM C882, mortar scrubbed into substrate): 450 psi (16.9 MPa) at 28 days.
    - f. Water Absorption (ASTM C642): 4 percent.
    - g. Chloride Permeability (AASHTO T-277, according to ASTM C1202 Table 1): Very low range.
    - h. Length Change, wet cure (ASTM C157): +0.034 percent.
    - i. Length Change, dry cure (ASTM C157): -0.15 percent.
  - 2. Product: "MasterEmaco N425" (formerly "Gel Patch") by BASF.
- C. Lath: Shall conform to applicable requirements of ASTM C1063 and the governing building code, including but not limited to FBC-B CHAPTER 25.
  - 1. Metal Lath: ASTM C847, minimum G60 galvanized; self-furring
    - a. Weight: To suit application, comply with deflection criteria, and as specified in FBC-B TABLE 2514.3.2 for framing spacing.
  - 2. Strip Lath: Same as Metal Lath, except 6 inch (300 mm) wide strip.
  - 3. Welded Wire Lath: ASTM C933; galvanized; with 2 inch (50 mm) square openings, paper or felt backing, of weight to suit application and as specified in FBC-B TABLE 2514.3.2 for framing spacing.
- D. Corner Mesh: Formed sheet steel, minimum 0.018 inch (0.5 mm) thick, expanded flanges shaped to permit complete embedding in cement plaster, minimum 2 inch (50 mm) size; minimum G60 galvanized..
- E. Beads, Screeds, Reveals, Control Joints, and Other Plaster Accessories:
  - 1. General:
    - a. Material: PVC, open grid flanges or perforated with nailing holes.

- b. Depth/ground governed by cement plaster thickness; maximum possible lengths.
- 2. Casing Beads: Bevelled edges.
- 3. Corner Beads: Radiused corners.
- 4. Base Screeds: Bevelled edges.
- 5. Control Joints: Use one of the follow, as indicated on Drawings; if not indicated, per A/E's direction.
  - a. One-piece accordion profile with 2 inch (50 mm) flange at both sides; overall width 4 inches (100 mm); furnish with removable tape.
  - b. Back-to-back casing beads, each with 2 inch (50 mm) flange; overall width 4 inches (100 mm).
- 6. Soffit Vents: Match existing.
- F. Anchorage: Tie wire, nails, and other metal supports, of type and size to suit application; to rigidly secure materials in place, galvanized.
- G. Fasteners: ASTM C1002 self-piercing tapping screws.
- H. Tie Wire: Annealed galvanized steel.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. General:
  - 1. Prior to beginning operations, all exterior cement plaster surfaces shall be inspected to determine locations and extent of defects in cement plaster work, and to identify scope of patching and repair required.
  - 2. Verify that substrates to receive cement plaster conform to the requirements of ASTM C926.
- B. Existing Conditions Survey and Analysis:
  - 1. Comprehensive evaluation of all exterior cement plaster areas shall be conducted by qualified persons experienced cement plaster analysis and repairs.
    - a. All cement plaster surfaces to be visually inspected for defects/damage, including but not limited to the following:
      - (1) Efflorescence: White crystalline deposits on wall surface; white streaks.
      - (2) Craze Cracking: Short, fine lines on the surface of cement plaster; typically about one-eighth (1/8) inch to about one-half (1/2) inch in length.
      - (3) Fine Fissures: Fine, tight fissures in the cement plaster.
      - (4) Linear Cracks: Fissures / fractures in cement plaster, such as dimensional cracks, angular cracks, corner cracks, and door and window cracks; indicate whether cracking is static or dynamic in nature.
      - (5) Delamination: Failure of the bond between cement plaster and substrate.
      - (6) Damage: Chipped or broken cement plaster and/or plaster accessory (e.g., corner bead).
    - b. Sounding: At locations where delamination of cement plaster is suspected (e.g., cracking, discoloration, unevenness in finished surface), conduct

- "soundings" to identify areas of delamination.
- c. Bond Strength Tests: At locations where delamination of cement plaster has been identified by soundings, conduct bond strength testing to determine the extent of defective cement plaster and to identify sound cement plaster.
    - (1) Bond strength test procedure shall include a pull-out test conducted on existing cement plaster surfaces.
    - (2) Test machine shall be any type that is of sufficient capacity and capable of applying the load continuously and without shock at the rate of 0.05 in. (1.27 mm) per minute, with provision for adjustment of the rate of loading.
    - (3) Cement plaster areas where testing indicates that bond strength is less than the minimum acceptable values specified in ASTM C932 (i.e., 150 psi) shall be deemed to be defective.
  - d. The edges of each area where delamination has been identified by soundings and/or bond strength testing shall be marked for removal.

### 3.02 PREPARATION

- A. General:
  1. Pressure clean all existing cement plaster surfaces, using minimum 3000 psi, 3 gal per minute equipment.
    - a. Areas where mildew is present or suspected must be pre-treated with mildewcide prior to pressure cleaning.
  2. Prior to application of cement plaster to masonry or concrete substrate surfaces:
    - a. Clean concrete and masonry substrate surfaces of foreign matter. Wash surfaces with clean water.
    - b. Wet cast-in-place concrete and unit masonry bases with fine water spray to produce a uniformly damp surface and to reduce excessive suction.
- B. At each area where efflorescence is identified in the Existing Stucco Inspection and Evaluation Report: Remove efflorescence from cement plaster surface.
- C. At each area where cracking is identified in the Existing Stucco Inspection and Evaluation Report:
  1. Craze Cracking or Fine Fissure Cracking (hairline cracks caused by plastic or drying shrinkage): Remove loose materials and foreign matter that could impair adhesion of crack repair materials to be used for repair; coordinate with preparation requirements specified in Section 099000 - Painting and Coating.
  2. Linear Static Cracking (1/32-inch to 1/4-inch wide): Remove loose materials and foreign matter that could impair adhesion of crack repair materials to be used for repair; coordinate with preparation requirements specified in Section 099000 - Painting and Coating.
  3. Large Dynamic Cracking (1/4-inch wide or wider): Rout out the crack to form a continuous slot, 1/4 inch W x 1/4 inch D. Remove loose materials and foreign matter that could impair adhesion of crack repair materials to be used for repair.
    - a. The edges of the routed slot shall be undercut where possible; if undercut is not possible, then slot shall have square edges. Edges shall be suitable for installation of bond breaker and joint sealer.

- b. Coordinate joint design (including edge slope) with joint sealant requirements specified in Section 079005 - Joint Sealers, and with preparation requirements specified in Section 099000 - Painting and Coating.
- D. At each area where delaminated cement plaster is identified in the Existing Stucco Inspection and Evaluation Report:
  1. Sound cement plaster to determine the extent of delaminated material.
  2. Remove unsound cement plaster material; profile base substrate by mechanical means.
    - a. Where unsound cement plaster material is to be removed, sawcut an edge line over sound cement plaster at least 2 inches beyond extent of unsound cement plaster material; sawcuts shall be same depth as cement plaster thickness, and shall not extend into substrate. The angle of sawcuts shall be slightly greater than 90 degrees, to provide optimal edge for mating of new cement plaster to existing; featheredging is not allowed.
  3. Remove paint from sound cement plaster a minimum of 12 inches surrounding area to be repaired.
- E. At each area where damage (e.g., rusted metal bead) is identified in the Existing Stucco Inspection and Evaluation Report:
  1. Remove sections of metal plaster bead which are rusted plus minimum 6 inches of sound (free of rust) metal at each end of rusted portion.
  2. Remove unsound cement plaster material and all cement plaster covering the legs of bead sections being removed; profile base substrate by mechanical means.
    - a. Where unsound cement plaster material is to be removed, sawcut an edge line over sound cement plaster at least 2 inches beyond extent of unsound cement plaster material; sawcuts shall be same depth as cement plaster thickness, and shall not extend into substrate. The angle of sawcuts shall be slightly greater than 90 degrees, to provide optimal edge for mating of new repair mortar or cement plaster to existing; featheredging is not allowed.
  3. Remove paint from sound cement plaster a minimum of 12 inches surrounding area to be repaired.
- F. At each area where cast-in-place concrete is exposed due to removal of delaminated or damaged cement plaster, the exposed concrete surface shall be prepared to receive new cement plaster by:
  1. Sandblasting, wire brushing, or chipping, or a combination thereof; and
  2. Application of a dash-bond coat of cement plaster, applied forcefully against the surface, left untroweled, undisturbed, and moist cured for at least 24 hours.

### 3.03 MIXING - CEMENT PLASTER

- A. General:
  1. Mix only as much cement plaster as can be used prior to initial set.
    - a. Size mixer to produce batches that will be applied within maximum of 1-1/2 hours after mixing.
  2. Accurately proportion materials for initial cement plaster mixture using measuring devices or known volume.

- a. Shovels of sand can be used after mixer is calibrated with known volumes of materials, including water.
  3. Use damp, loose sand.
  4. Mix materials dry, to uniform consistency, before adding bonding admix/water mixing liquid.
  5. Add specified admixtures to batch in accordance with manufacturer's recommendations; mix slowly to avoid entrapping air.
  6. Retempering of base-coat cement plaster is permitted one time only after initial mixing.
    - a. Cement plaster not used within 1-1/2 hours of initial mixing shall be discarded.
  7. Retempering of finish-coat cement plaster is not permitted.
  8. Protect cement plaster mixture from contamination and excessive evaporation.
- B. Bonding Admix/Water Mixing: Mix in accordance with integral bonding admixture manufacturer's instructions.
  1. Where increased physical and chemical resistance are required, increase the bonding admix content in the mixing liquid in accordance with manufacturer's instructions.
  2. Do not use integral bonding admixture in a plaster mix that already has air entrained.
- C. Mechanical Mixing:
  1. Mix each batch separately.
    - a. Double batching with single batch discharge shall not be permitted.
  2. Maintain mixer in clean condition before, during, and after cement plaster preparation.
    - a. Remove partially set and hardened cement plaster from mixer drum before next batch.
    - b. If mixer has been previously used in preparing gypsum plaster, thoroughly clean prior to use to prepare cement plaster.
  3. Maintain mixer in continuous operation while charging mixer.
    - a. Add water to bring cement plaster to desired consistency.
    - b. Continue mixing for 3 to 5 minutes after all ingredients have been added to the mixer.
  4. Mix factory-prepared cement plaster in accordance with manufacturer's recommendations.
  5. Do not over-mix, aerate, or mix at a high speed.
- D. Hand Mixing:
  1. Hand mixing will be allowed only when authorized by Owner.
  2. Provide waterproof protection around mixing tub and water barrels when mixing inside the building.
- E. Mix Proportions:
  1. Dash-bond Coat: 1 part of Portland cement and maximum 2 parts of sand, proportioned by volume and mixed to a consistency that will permit application as specified in ASTM C926.
  2. Base Coat(s): Plaster Mix "MS" per ASTM C926 Table 3.
    - a. Add fiber and integral bonding admixtures per manufactures' recommendations.

3. Finish Coat: Plaster Mix "FMS" per ASTM C926 Table 4, or equivalent factory-prepared mixture with water as recommended by manufacturer.

### 3.04 STUCCO REPAIRS

#### A. General:

1. Defective or damaged cement plaster and related plaster accessories shall be removed.
2. After application of finish coating system, patched and repaired cement plaster cracks, areas, beads and edges shall not be distinguishable in the finished cement plaster work.

#### B. Repair of Cracks in Cement Plaster:

##### 1. General:

- a. Prepare surfaces and install crack repair materials in accordance with manufacturer's application instructions.
  - b. Crack shall be free from dirt, grease, or other contaminants. Blow cracks clean with compressed air, not to exceed 150 psi.
  - c. If substrate appears chalky after cleaning or if other conditions warrant, apply primer in accordance with manufacturer's application instructions.
2. Craze Cracking and Fine Fissure (Hairline) Cracks: After surface preparation, fill crack with appropriate crack repair materials.
  3. Linear Static Cracks: Fill crack with appropriate crack repair materials.
  4. Large Dynamic Cracks: After surface preparation, install bond breaker at bottom of new routed slot and install joint sealant.
    - a. The edges of the crack shall be undercut where possible. Brush cracks clean of loose debris with a soft brush.

#### C. Repair of Delaminated or Damaged Stucco:

1. Cut, patch, repair, and point-up cement plaster as necessary to restore uniform cement plaster (stucco) finish, and to prepare such finish for coating application.
2. Repair cracks and intended surfaces by moistening cement plaster and filling with new cement plaster, troweled or tamped flush with adjoining surfaces.
3. Point-up finish surfaces around items which are built into or penetrate cement plaster surfaces.

#### D. Plaster Bead Repairs at Corners and Reveals:

1. At locations where existing metal bead is rusted through or damaged, cut and remove rusted or damaged bead and adjacent cement plaster. Then patch and repair the cement plaster to match adjacent corner/reveal detail, using slip-form method without a bead.
2. At locations where existing metal bead has minor rust, solvent clean; then remove loose rust, loose mill scale, and other foreign substances using hand tools according to SSPC-SP 2 or power tools according to SSPC-SP 3. Then coat metal with rust-inhibitive primer recommended by top coat manufacturer (refer to Section 099000 - Painting and Coating), and patch and repair the cement plaster to match adjacent corner/reveal detail.

### 3.05 CEMENT PLASTER APPLICATION

A. General:

1. Apply premixed cement plaster in accordance with manufacturer's instructions.
2. Apply cement plaster in accordance with ASTM C926.
3. Moist cure base coats.
4. Apply second coat immediately following initial set of first coat.
5. After curing, dampen previous coat prior to applying finish coat.
6. Avoid excessive working of surface. Delay troweling as long as possible to avoid drawing excess fines to surface.
7. Where cement plaster is applied to horizontal surfaces, provide slope to prevent water from accumulating or standing.
8. Where cement plaster abuts aluminum, protect metal from contact with such cement plaster.
9. Where dissimilar base materials abut and are to receive a continuous coat of cement plaster, the juncture shall be covered with a 6-inch wide strip lath extending 3 inches on either side of the juncture.
10. Do not use integral bonding admixture as a surface-applied external bonding agent or as a primer.

B. Apply cement plaster with complete embedment into bases and all accessories. Fill all corner beads with each coat.

C. At each cement plaster area to be patched, apply cement plaster with interruptions occurring only at junctures of cement plaster planes, openings, or control joints.

D. At locations where cement plaster repair work is over metal base (e.g., metal lath), install cement plaster in accordance with the requirements of ASTM C926 for the application of three-coat cement plaster on metal plaster bases.

1. Cement plaster thickness for patching and repairs shall match existing.

E. At locations where cement plaster repair work is over solid base (e.g., concrete, concrete masonry), install cement plaster in accordance with the requirements of ASTM C926 for the application of three-coat cement plaster on solid bases.

1. Cement plaster thickness for patching and repairs shall match existing.
2. Where total cement plaster thickness will exceed the total thickness specified in ASTM C926 Table 1 for three-coat work over unit masonry or cast-in-place concrete, self-furring metal lath shall be installed in accordance with ASTM C1063.

F. Delay application of brown coat until scratch coat has attained sufficient rigidity to resist cracking or other physical damage when the next coat is applied.

1. Use a long rod or slicker to densify each coat.

G. Curing and Interval:

1. First and second coats of cement plaster shall be applied and moist cured as set forth in ASTM C926 and FBC-B TABLE 2512.6.
  - a. The base coat shall be damp cured for a period of not less than 24 hours as set forth in FBC-B SECTION 2516.1.6.6.
2. Cement plaster finish coats shall be applied over base coats that have been in place for the time periods set forth in ASTM C926 and FBC-B SECTION 2516.1.6.8.

- a. The third or finish coat shall be applied with sufficient material and pressure to bond and to cover the brown coat, and shall be of sufficient thickness to conceal the brown coat; additional coats shall be applied as necessary to meet the finished thickness specified or to flush with adjacent cement plaster surfaces.
3. Cement plaster shall be kept damp for a period of not less than 48 hours after application of the finish coat.

H. Finish Texture:

1. Finish texture of new cement plaster used for patching and repairs shall match finish of existing cement plaster on adjacent surfaces, to provide a uniform and consistent overall appearance; for reference, use the following finishes in the locations indicated:
    - a. Vertical Surfaces (e.g., walls; columns): Smooth or textured finish (as indicated on drawings and verified in the field), to match existing finish on adjacent cement plaster.
    - b. Horizontal Surfaces (e.g., ceilings; soffits): Smooth finish, to match existing finish on adjacent cement plaster.
  2. Patched and repaired cement plaster work shall not be distinguishable in the finished cement plaster work.
- I. Tolerance: Complete cement plaster work such that the deviation from true plane (exclusive of texture) is no greater than 1/4 in. (6 mm) as measured from line of a 10-ft (3.5-m) straightedge placed at any location on surface.

### 3.06 ADJUSTING, CLEANING AND PROTECTION

A. Adjusting:

1. Point-up cement plaster around trim and other locations where cement plaster abuts dissimilar materials.
  2. Remove defective and damaged cement plaster by cutting it out.
  3. Replace removed cement plaster using specified cement plaster brought to desired texture consistent with surrounding area.
- B. Provide temporary covering to minimize spattering of cement plaster on adjacent work.
- C. Remove cement plaster materials from door frames, windows, and other surfaces which are not to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged.
- D. Remove protective tape from control joint accessories after application of cement plaster finish coat.

END OF SECTION

SECTION 99000  
PAINTING AND COATING

PART 1 GENERAL

1.01 Finish all interior's and exteriors surfaces exposed to view as described in section 01010 scope of work

1.02 RELATED REQUIREMENTS

- A. Section 079005 - Joint Sealers: Removal and replacement of joint sealers, backing and bond breakers; joint sealer for stucco crack repair.
- B. Section 092410 - Portland Cement Plaster Repairing: Patching and repair of damaged or defective cement plaster work.
- C. Section 099723 - Acrylic Waterproof Coating System: High-build acrylic waterproof coating system over exterior cement plaster (stucco).

1.03 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM D235 -- Standard Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent).
  - 2. ASTM D522 -- Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
  - 3. ASTM D562 -- Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.
  - 4. ASTM D1308 -- Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
  - 5. ASTM D1475 -- Standard Test Method For Density of Liquid Coatings, Inks, and Related Products.
  - 6. ASTM D3273 -- Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
  - 7. ASTM D3359 -- Standard Test Methods for Measuring Adhesion by Tape Test.
  - 8. ASTM D3960 -- Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
  - 9. ASTM D4214 -- Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
  - 10. ASTM D5201 -- Standard Practice for Calculating Formulation Physical Constants of Paints and Coatings.
  - 11. ASTM D6904 -- Standard Practice for Resistance to Wind-Driven Rain for Exterior Coatings Applied on Masonry.
- B. Florida Building Code (FBC):
  - 1. FBC-B -- Florida Building Code, Building (including 2012 Supplement).
- C. Master Painters Institute, Master Painters and Decorators Association (MPI):
  - 1. MPI (APL) -- Master Painters Institute Approved Products List.
  - 2. MPI (APSM) -- Master Painters Institute Architectural Painting Specification

Manual.

- D. The Society for Protective Coatings (SSPC).
  - 1. SSPC (PM1) -- Good Painting Practice: SSPC Painting Manual, Vol. 1.
  - 2. SSPC-SP 1 -- Solvent Cleaning.
  - 3. SSPC-SP 2 -- Hand Tool Cleaning.
  - 4. SSPC-SP 3 -- Power Tool Cleaning.
- E. U.S. Code of Federal Regulations (CFR):
  - 1. U.S. Environmental Protection Agency:
    - a. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings.

#### 1.04 SUBMITTALS

- A. General:

1. For submittal procedures, see General Conditions, Supplementary Conditions, and Section 01300.
  - B. Product Data: Provide complete list of all products to be used, with the following information for each:
    1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
    2. MPI product number (e.g. MPI #47).
    3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
    4. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.
  - C. Samples:
    1. Selection Samples: Submit three sets of paper "draw down" samples, illustrating range of colors available for each top coat product specified.
      - a. Where sheen is specified, submit samples in only that sheen.
    2. Verification Samples: Submit two painted samples, illustrating selected colors and textures for each color and system selected with specified coats cascaded.
      - a. Submit on aluminum sheet, 12 x 12 inch (300 x 300 mm) in size.

#### 1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.
- B. Maintain one copy of relevant portions of MPI (APSM) on project site at all times.
- C. Mock-Up:
  1. Provide interior wall panel, 10 feet (3 m) long by 10 feet (3 m) wide, illustrating coating color, texture, and finish.
    - a. If requested by OWNER, provide additional mock-ups for color and sheen selection.
  2. Provide exterior wood trim assembly, 10 feet (3 m) long, illustrating coating color, texture, and finish.
    - a. If requested by OWNER, provide additional mock-ups for color and sheen

- selection.
3. Provide one interior and one exterior door and frame assembly illustrating coating color, texture, and finish.
    - a. If requested by OWNER, provide additional mock-ups for color and sheen selection.
  4. Locate mock-ups where directed.
  5. Approved mock-ups may remain as part of the Work.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

#### 1.07 EXTRA MATERIALS

- A. Supply 1 gallon (4 L) of each paint type, color and sheen used; store where directed.
  1. Label each container with color in addition to the manufacturer's label.

#### 1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior coatings during rain or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

#### 1.09 WARRANTY

- A. Labor and Material Warranty: Submit manufacturer's ten (10) year labor and material warranty for specified systems. Approval of warranty period and confirmation of system compatibility with substrates and joint sealants is required prior to system application.

### PART 2 - PRODUCTS

#### 2.01 MANUFACTURERS

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

- B. Provide all paint and coating products from the same manufacturer.
  - 1. In the event that a single manufacturer cannot provide all specified products, minor exceptions will be permitted provided approval by OWNER is obtained using the specified procedures for substitutions.

- C. Paints:
  - 1. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
  - 2. PPG Architectural Finishes, Inc: [www.ppgaf.com](http://www.ppgaf.com).
  - 3. Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).
  - 4. or approved or equal by owner

- D. Primers and Block Fillers: Same manufacturer as top coats.

## 2.02 PAINTS AND COATINGS - GENERAL

- A. Material Compatibility: Provide block fillers, primers, undercoats', and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  - 1. Patching materials used in conjunction with coating system shall be compatible with such coating system.
- B. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
  - 1. Where MPI paint numbers are specified, provide products listed in MPI (APL) for specified MPI categories, except as otherwise indicated.
  - 2. Provide Premium Grade systems (2 top coats) as defined in MPI (APSM), except as otherwise indicated.
    - a. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.
  - 3. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 4. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  - 5. Supply each coating material in quantity required to complete entire project's work from a single production run.
  - 6. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- C. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- D. Volatile Organic Compound (VOC) Content:
  - 1. Provide coatings that comply with the most stringent requirements specified in the following:
    - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
  - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base

and water added at project site; or other method acceptable to authorities having jurisdiction.

- E. Flammability: Comply with applicable code for surface burning characteristics.
- F. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by OWNER from the manufacturer's full line.
- G. Colors: To be selected from manufacturer's full range of available colors.
  - 1. Selection to be made by OWNER after award of contract.
  - 2. Extend colors to surface edges; colors may change at any edge as directed by Architect.
  - 3. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

## 2.03 PAINT SYSTEMS - EXTERIOR

- A. Concrete / Cement Plaster (Stucco) / CMU: High-build acrylic waterproof coating system; refer to Section 099723 - Acrylic Waterproof Coating System.
- B. Paint WE-OP-3L - Wood, Opaque, Latex, 3 Coat:
  - 1. Preparation as specified by paint manufacturer.
  - 2. Two top coats, over one coat of latex primer sealer.
  - 3. Top Coat(s): MPI #311 (Latex, Exterior, High Performance Architectural, Semi-Gloss, MPI Gloss Level 5), meeting the following criteria:
    - a. Vehicle Type: 100-percent acrylic latex.
    - b. Mildew Resistance (ASTM D3273): Pass; no growth.
    - c. Flexibility (ASTM D522): Pass; no cracking.
    - d. Alkali Resistance (ASTM D1308): Pass.
    - e. Wind Driven Rain Resistance (ASTM D6904): Pass.
    - f. Product Sherwin Williams Duration Exterior latex satin @ 250-300sq ft per gal. 5.9 mils wet 2.4 mils dry, or equal.
  - 4. Primer(s): As recommended by manufacturer of top coat product.
- C. Paint WE-TR-VS - Wood, Transparent, Varnish, Stain: N/A.
- D. Paint ME-OP-3L - Ferrous Metals, Latex, 3 Coat:
  - 1. Preparation as specified by paint manufacturer.
  - 2. Two top coats and one coat primer.
  - 3. Top Coat(s): MPI #311 (Latex, Exterior, High Performance Architectural, Semi-Gloss, MPI Gloss Level 5), meeting the following criteria:
    - a. Vehicle Type: 100-percent acrylic latex.
    - b. Mildew Resistance (ASTM D3273): Pass; no growth.
    - c. Flexibility (ASTM D522): Pass; no cracking.
    - d. Alkali Resistance (ASTM D1308): Pass.
    - e. Wind Driven Rain Resistance (ASTM D6904): Pass.
    - f. Product: Sherwin Williams Duration Exterior latex satin @ 250-300sq ft per gal. 5.9 mils wet 2.4 mils dry, or equal.
  - 4. Primer(s): As recommended by manufacturer of top coat product.
- C. Paint MgE-OP-3L - Galvanized Metals, Latex, 3 Coat:
  - 1. Preparation as specified by paint manufacturer.

2. Two top coats and one coat primer

3. Top Coat(s): MPI #311 (Latex, Exterior, Gloss, MPI Gloss Level 6), meeting the following criteria:
- a. Vehicle Type: 100-percent acrylic latex.
  - b. Mildew Resistance (ASTM D3273): Pass; no growth.
  - c. Flexibility (ASTM D522): Pass; no cracking.
  - d. Alkali Resistance (ASTM D1308): Pass.
  - e. Wind Driven Rain Resistance (ASTM D6904): Pass.
  - f. Product: Sherwin Williams Exterior, or equal.
4. Primer(s): As recommended by manufacturer of top coat product.

### PART 3 - EXECUTION

#### 3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
  - 1. Patched/repared cement plaster/stucco substrates must be fully cured in accordance with recommendations of paint/coating manufacturer.
- C. Test shop-applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using an electronic moisture meter.
  - 1. Do not apply finishes unless moisture content of surfaces is within acceptable tolerances recommended by the coating manufacturer.
- E. Check adhesion of old paint using ASTM D3359, measuring adhesion by Tape Method

#### 3.02 PREPARATION

- A. General:
  - 1. Clean surfaces thoroughly and correct defects prior to coating application.
  - 2. Prepare surfaces using the methods recommended by the coating manufacturer for achieving the best result for the substrate under the project conditions.
  - 3. Remove or repair existing coatings that exhibit surface defects.

4. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
  5. Seal surfaces that might cause bleed through or staining of topcoat.
  6. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
  7. Concrete and Unit Masonry Surfaces to be Painted:
    - a. Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter.
    - b. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry.
    - c. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
  8. Cement Plaster (Stucco) Surfaces to be Painted:
    - a. Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces.
    - b. Wash and neutralize high alkali surfaces.
  9. Insulated Coverings to be Painted: Remove dirt, grease, and oil from canvas and cotton.
  10. Concrete Floors to be Painted: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
  11. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
  12. Corroded Steel and Iron Surfaces to be Painted: Prepare using at least SSPC-SP 2 or SSPC-SP 3, followed by SSPC-SP 1.
  13. Uncorroded Uncoated Steel and Iron Surfaces to be Painted:
    - a. Remove grease, mill scale, weld splatter, dirt, and rust.
    - b. Where heavy coatings of scale are evident, remove by hand or power tool wire brushing or sandblasting; clean by washing with solvent.
    - c. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned.
    4. Prime paint entire surface; spot prime after repairs.
  14. Shop-Primed Steel Surfaces to be Finish Painted:
    - a. Sand and scrape to remove loose primer and rust.
      - a. Feather edges to make touch-up patches inconspicuous.
    - b. Clean surfaces with solvent.
    - c. Prime bare steel surfaces.
    - d. Re-prime entire shop-primed item.
- B. Additional Requirements for Surfaces with Existing Coatings:
1. Before application of new coatings, perform the following on surfaces covered by soundly-adhered coatings, defined as those which cannot be removed with a putty knife:
    - a. Sand existing glossy surfaces to be painted to reduce gloss.

- (1) Brush, and wipe clean with a damp cloth to remove dust.
    - b. Previously painted surfaces specified to be repainted or damaged during construction shall be thoroughly cleaned of all grease, dirt, dust or other foreign matter.
    - c. Blistering, cracking, flaking and peeling or other deteriorated coatings shall be removed.
    - d. Chalk shall be removed so that when tested in accordance with ASTM D4214, the chalk resistance rating is no less than 8.
    - e. Slick surfaces shall be roughened. Damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls shall be repaired with suitable material to match adjacent undamaged areas.
    - f. Edges of chipped paint shall be feather edged and sanded smooth.
    - g. Rusty metal surfaces shall be cleaned in accordance with SSPC requirements.
      - (1) Solvent, mechanical, or chemical cleaning methods shall be used to provide surfaces suitable for painting.
    - h. New, proposed coatings shall be compatible with existing coatings.
  2. Existing Coated Surfaces with Minor Defects:
    - a. Sand, spackle, and treat surfaces with minor defects (i.e., scratches, nicks, cracks, gouges, spalls, alligating, chalking, or irregularities due to partial peeling of previous coating) as necessary to render such surfaces to a uniform smooth finish.
    - b. Remove chalking by sanding or blasting so that when tested in accordance with ASTM D4214, the chalk rating is not less than 8.
  3. Removal of Existing Coatings: Remove existing coatings from the following:
    - a. Surfaces containing large areas of minor defects.
    - b. Surfaces containing more than 20 percent peeling area.
    - c. Surfaces where rust is visible/apparent through existing coating.
  4. Cement Plaster (Stucco) Substrate Repairs:
    - a. Repair cracks, holes, spalled/delaminated areas, and other defects in existing cement plaster/stucco surfaces using appropriate repair materials; verify compatibility of repair materials with coating system prior to use.
    - b. Remove any protruding concrete accessories and patch to smooth out any irregularities.
    - c. For additional requirements, refer to Section 092410 - Portland Cement Plaster Repairing.
  5. Other Substrate Repairs:
    - a. Repair substrate surface damaged during coating removal.
    - b. Sand edges of adjacent soundly-adhered existing coatings so they are tapered as smooth as practical to areas involved with coating removal.
    - c. Clean and prime the substrate as specified.
- C. Additional Requirements for New (Previously Uncoated) Surfaces:
  1. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
  2. Surfaces:
    - b. Remove or repair existing coatings that exhibit surface defects.
    - c. Mask surfaces that are not to be finished, or that are to be finished at a later time.

3. Marks: Seal with shellac that which may bleed through surface finishes.
4. Impervious Surfaces:
  - a. Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach.
  - b. Rinse with clean water and allow surface to dry.
5. New Cement Plaster (Stucco) Surfaces to be Painted:
  - a. Fill hairline cracks, small holes, and imperfections with same patching materials used for similar repairs to existing plaster; for additional requirements, refer to Section 092400 - Portland Cement Plastering.
  - b. Make smooth and flush with adjacent surfaces.
  - c. Wash and neutralize high alkali surfaces.
6. Galvanized Surfaces to be Painted:
  - a. Remove surface contamination and oils and wash with solvent.
  - b. Apply coat of etching primer.

### 3.03 APPLICATION

#### A. General:

1. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
2. Apply products in accordance with manufacturer's instructions.
3. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
4. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
5. Apply each coat to uniform appearance.
6. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.
7. Sand wood and metal surfaces lightly between coats to achieve required finish.
8. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
9. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

#### B. Additional Requirements for Cement Plaster (Stucco):

1. For uniformity of color, texture and sheen, use consistent application techniques throughout the Project.
2. Apply coating material in two (2) coats; total dry film thickness (DFT) per manufacturer's requirements for 10-year warranty, but not less than 12 mils.
3. Multiple coats may be required when color difference between existing and new coatings is significant.
4. Maintain proper wet film thickness (WFT) during application, to ensure performance characteristics desired.
5. Work to natural break in surfaces before stopping work.
6. Work from wet edge with 50 percent overlap.
7. Use sufficient material to obtain pinhole-free, consistent film build on treated surfaces.
8. Priming:

- a. Apply primer to all previously unpainted plaster/stucco, and to previously painted plaster/stucco that are chalking or friable (powdery) after power washing.
  - b. Fill porous surfaces with primer, and back-roll to eliminate pinholes. Apply by working material into pores, crevices and joints. Allow primer to dry before proceeding (typically 24 to 48 hours).
  - c. Apply finish coats after primer has dried, and in accordance with manufacturer's instructions.
9. Application:
- a. By Brush:
    - (1) Application by brush is recommended only for small inaccessible areas such as touch-ups.
    - (2) Use only nylon brushes.
  - b. By Roller:
    - (1) Use a 3/4 inch to 1-1/4 inch (12/5 mm to 32 mm) nap roller cover (lamb's wool)
    - (2) Completely saturate roller and keep it loaded with coating to building required thickness
    - (3) Roll coating in consistent fan-like pattern, to achieve uniform coating thickness.
    - (4) Cross-roll to achieve uniform thickness and maintain wet edge. Back-roll material in one direction, as stroke variations may result in uneven color and texture.
  - c. By Spray:
    - (1) Smooth Texture: Use airless equipment.
    - (2) Fine or Coarse Texture: Use heavy-duty sprayer designed for application of coatings that contain sand particles, with gun pressure of approximately 30 psi (0.21 MPa).
    - (3) Back-rolling after spray application is strongly recommended, to achieve uniform coating thickness and texture.

### 3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### 3.05 PROTECTION

- A. Protect finished coatings until completion of project.
- B. Touch-up damaged coatings after Substantial Completion.

END OF SECTION

## SECTION 099723

### ACRYLIC WATERPROOF COATING SYSTEM

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Surface preparation and field application of high-build acrylic waterproof coating system over exterior cement plaster (stucco) substrates.

##### 1.02 RELATED REQUIREMENTS

- A. Section 079005 - Joint Sealers: Removal and replacement of joint sealers, backing and bond breakers; joint sealer for cement plaster (stucco) crack repair.
- B. Section 092410 - Portland Cement Plaster Repairing: Patching and repair of damaged or defective cement plaster (stucco) work.
- C. Section 099000 - Painting and Coating: Surface preparation and field application of paints, stains, varnishes, and other coatings.

##### 1.03 REFERENCE STANDARDS

- A. For requirements relating to reference standards, see Section 014219 - Reference Standards.
- B. American Society for Testing and Materials (ASTM):
  - 1. ASTM D235 -- Standard Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent).
  - 2. ASTM D562 -- Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.
  - 3. ASTM D1475 -- Standard Test Method For Density of Liquid Coatings, Inks, and Related Products.
  - 4. ASTM D3960 -- Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
  - 5. ASTM D4214 -- Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
  - 6. ASTM D5201 -- Standard Practice for Calculating Formulation Physical Constants of Paints and Coatings.
- C. Florida Building Code, 2010 edition (FBC):
  - 1. FBC-B -- Florida Building Code, Building (including 2012 Supplement).
- D. Master Painters Institute, Master Painters and Decorators Association (MPI):
  - 1. MPI (APSM) -- Master Painters Institute Architectural Painting Specification Manual.
- E. The Society for Protective Coatings (SSPC).
  - 1. SSPC (PM1) -- Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for

Protective Coatings.

2. SSPC-SP 2 -- Hand Tool Cleaning; Society for Protective Coatings.
  3. SSPC-SP 3 -- Power Tool Cleaning; Society for Protective Coatings.
- F. U.S. Code of Federal Regulations (CFR):
1. U.S. Environmental Protection Agency:
    - a. 40 CFR 59, Subpart D -- National Volatile Organic Compound Emission Standards for Architectural Coatings.

#### 1.04 SUBMITTALS

- A. Product Data: Provide data on all finishing products, including VOC content and Gloss Level.
  1. Include manufacturer's instructions for surface preparation, application, storage, tinting, film thickness (wet and dry), general cautions, and warranty requirements.
- B. Samples:
  1. Verification Samples: For each surface to be painted, submit two painted samples illustrating field-verified existing color. Include a Color Schedule, indicating applicable locations where each color is to be used.
- C. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.

#### 1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.
- B. Source Limitations: Obtain block fillers, primers and undercoat materials for each coating system from the same manufacturer as the finish coats.
- C. Safety during construction and the protection of adjacent public and private properties shall conform to applicable requirements of the following:
  1. The governing building code, including but not limited to FBC-B CHAPTER 13.
  2. Industrial Health and Safety Regulations (current edition), issued by the authorities having jurisdiction.
  3. Local, State and Federal regulations.
- D. Flame and smoke rating requirements for products and finishes shall conform to applicable requirements of the governing building code.
- E. Mock-Ups
  1. General:
    - a. For general requirements for mock-up, see Section 99000 – PAINTING AND COATING
    - b. Locate where directed.
    - c. Mock-ups may remain as part of the Work.
  2. Plaster Walls: Provide panel, 10 feet (3 m) long by 10 feet (3 m) wide, illustrating

- coating color, sheen, and finish.
- 3. Steel Doors and Frames: Provide door and frame assembly illustrating paint coating color, sheen, and finish.
- F. Field Quality Control: Provide Manufacturer's Field Service consisting of a minimum of one weekly site visit by manufacturer's representative or its distributor's representative, for observation of coating system application.
  - 1. Owner reserves the right to complete recommended testing required by the manufacturer at completion of work, to assure that warranty and contract requirements are met.
  - 2. Submit copies of Manufacturer's Field Service Reports, indicating observation before, during and after application of coating system.

#### 1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.
- D. Storage, mixing, application and disposal of all paint and related waste materials shall conform to requirements of local authorities having jurisdiction.

#### 1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Do not apply exterior coatings during rain, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- C. Minimum Application Temperatures for Paints:
  - 1. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 degrees F (10 and 32 degrees C).
  - 2. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 degrees F (7.2 and 35 degrees C).
  - 3. Do not apply paint in rain, fog or mist, or when the relative humidity exceeds 85 percent, or at temperatures less than 5 degrees F (3 degrees C) above the dew point, or to damp or wet surfaces.
    - a. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and within temperature limits specified by manufacturer during application and drying periods.
- D. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

1. Perform no painting or decorating work unless a minimum lighting level of 323 Lux (30 foot candles) is provided on surfaces to be painted.
  2. Adequate lighting facilities shall be provided by the Contractor.
- E. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- F. Concrete surfaces must be installed at least 28 days prior to painting and decorating work, and must be visually dry on both sides.

#### 1.08 WASTE MANAGEMENT AND DISPOSAL

- A. Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Obtain information on these controls from applicable government authorities having jurisdiction.
- B. All waste materials shall be separated and recycled. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility. Materials that cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
- C. Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- D. To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:
1. Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
  2. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
  3. Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
  4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
  5. Empty paint cans are to be dry prior to disposal or recycling (where available).
  6. Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
- E. Set aside and protect surplus and uncontaminated finish materials not required by the Owner and deliver or arrange collection for verifiable re-use or re-manufacturing.

#### 1.09 WARRANTY

- A. Submit manufacturer's ten (10) year labor and material warranty for specified systems. Approval of warranty period and confirmation of system compatibility with substrates and joint sealants is required prior to system application.

#### 1.10 EXTRA MATERIALS

- A. For additional provisions, see Section 99000 PAINTING AND COATING.

- B. Supply 1 gallon (4 L) of each color, type, and surface texture; store where directed.
- C. Label each container with color, type, texture, and room locations in addition to the manufacturer's label.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. Paints (for use on surfaces other than exterior cement plaster/stucco, masonry, or concrete): Refer to Section 099000 - Painting and Coating.
- B. Acrylic Waterproof Coating System (for use on exterior cement plaster/stucco and concrete surfaces):
  - 1. Basis of design: BASF
  - 2. Substitutions: Not allowed, except with written approval by OWNER.
  - 3. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
  - 4. PPG Architectural Finishes, Inc: [www.ppgaf.com](http://www.ppgaf.com).
  - 5. Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).
- C. Patching Materials:
  - 1. Basis of Design: BASF.
  - 2. Patching materials used in conjunction with coating system shall be compatible with such coating system.
  - 3. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
  - 4. PPG Architectural Finishes, Inc: [www.ppgaf.com](http://www.ppgaf.com).
  - 5. Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).

### 2.02 PAINTS AND COATINGS - GENERAL

- A. Material Compatibility: Provide primers and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Paints and Coatings: Ready mixed, except field-catalyzed coatings. Prepare pigments:
  - 1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
  - 2. For good flow and brushing properties.
  - 3. Capable of drying or curing free of streaks or sags.
- C. Volatile Organic Compound (VOC) Content:
  - 1. Provide coatings that comply with the most stringent requirements specified in the following:
    - a. 40 CFR 59, Subpart D.
    - b. Architectural coatings VOC limits of State of Florida.
  - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

D. Provide Premium Grade systems (2 top coats) as defined in MPI (APSM), except as otherwise indicated.

1. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.

E. Colors: As indicated on Drawings; or if not indicated, then as selected by Architect.

## 2.03 PRIMER AND COATING MATERIALS

- A. Primer (Acrylic Primer for Use With Acrylic Waterproof Coating System): White-pigmented, acrylic copolymer primer, designed to enhance bond strengths of acrylic coating to substrate (including chalky surfaces).
1. Physical Characteristics:
    - a. Density (ASTM D1475): 9.0 lbs/gal (1.08 kg/L).
    - b. Solids Content (ASTM D5201): 28 percent by weight; 19 percent by volume.
    - c. VOC Content (ASTM D3960): 2.58 lbs/gal (309 g/L).
  2. Product: "Thoro Primer 2K" by BASF.
  3. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
  4. PPG Architectural Finishes, Inc: [www.ppgaf.com](http://www.ppgaf.com).
  5. Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).
- B. Acrylic Waterproof Coating System: Water-based, high-build, 100-percent acrylic waterproof coating, designed for exterior application over concrete and plaster/stucco surfaces.
1. Texture: Smooth.
  2. Physical Characteristics:
    - a. Density (ASTM D1475): 11.4 to 12.4 lbs/gal (1.37 to 1.49 kg/L).
    - b. Solids Content (ASTM D5201): 56.2 percent by weight; 38 percent by volume.
    - c. Viscosity (ASTM D562): 102 to 110 KU.
    - d. VOC Content (ASTM D3960): 0.76 to 0.77 lbs/gal (91 to 92 g/L).
  3. Performance Characteristics:
    - a. Resistance to Wind-Driven Rain (FS TT-C-555B): Shall meet requirements; no water penetration.
    - b. Accelerated Weathering (ASTM G23, Type D, 5000 hrs): Pass.
    - c. Visual Color Change (ASTM D1729, 5000 hrs): Pass.
    - d. Water-Vapor Permeance (ASTM D1653): 13 perms.
    - e. Salt Spray (fog) Resistance (ASTM B117, 300 hrs): Pass.
    - f. Flexibility (ASTM D1737, 1-inch mandrel): No cracking.
    - g. Dirt Pick-up (ASTM D3719, 6 month exposure): 92.02; Pass.
    - h. Sand Abrasion Resistance (ASTM D968, Method A): Pass.
    - i. Impact Resistance (ASTM D2794, 30 lbs): Pass.
    - j. Fungus Resistance (ASTM D3273): Shall meet requirement; no growth.
    - k. Mildew Resistance (FS TT-P-29; Fed Std 141, Method 6152 and 6271.1):
      - (1) Aspergillus Oryzae (7 days): No growth.
      - (2) Aspergillus Niger (21 days): No growth.
    - l. Surface Burning Characteristics (ASTM E84):
      - (1) Flame Spread: 1.
      - (2) Smoke: 4.
      - (3) Fuel Contributed: 7.
    - m. Flash Point (ASTM D56, Tag Closed Tester): Greater than 200 degrees F (93 degrees C).
  4. Product: "MasterProtect HB 400 Smooth" (formerly "Thorocoat Smooth") by BASF.
    1. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
    2. PPG Architectural Finishes, Inc: [www.ppgaf.com](http://www.ppgaf.com).

3. Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).

#### 2.04 ACCESSORY MATERIALS

A. Patching Materials (for repairing cracks and other defects in exterior cement plaster/stucco):

1. Patching Material Type 1 (for static hairline cracks caused by plastic or drying shrinkage): Use specified Acrylic Waterproof Coating in accordance with manufacturer's instructions.
  2. Patching Material Type 2 (for static cracks hairline to 1/4-inch in width): Water-based, acrylic elastomeric crack filler for repairing cracks.
    - a. Performance Characteristics:
      - (1) Tensile Strength (ASTM D412): 100 psi (0.7 MPa).
      - (2) Ultimate Elongation at Break (ASTM D412): 275 percent.
    - b. Product:
      - (1) Smooth: "MasterProtect FL 748" (formerly "Sonocoat Acrylic Patching Compound 748") by BASF.
      - (2) Textured: "MasterProtect FL 746" (formerly "Sonocoat Acrylic Patching Compound 746T") by BASF.
  3. Patching Material Type 3 (for patching dynamic cracks more than 1/4-inch in width): Joint Sealant Type S-5; for additional requirements, refer to Section 079005 - Joint Sealers.
  4. Patching Material Type 4 (for repair/replacement of small areas of damaged cement plaster/stucco): Repair Mortar; for additional requirements, refer to Section 092410 - Portland Cement Plaster Repairing.
  5. Patching Material Type 5 (for repair/replacement of large areas of damaged or delaminated cement plaster/stucco): Cement plaster (stucco); for additional requirements, refer to Section 092410 - Portland Cement Plaster Repairing.
  6. Primer / Surface Conditioner: As recommended by Patching Material manufacturer.
- B. Fastener Head Cover Material: Use Patching Material Type 2.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Verify that substrates and surfaces are ready to receive Work in accordance with the paint/coating manufacturer's instructions.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
  1. Patched/repared cement plaster/stucco substrates must be fully cured in accordance with recommendations of paint/coating manufacturer.
- C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is within acceptable tolerances recommended by the coating manufacturer.

### 3.02 SURFACE PREPARATION

- A. General:
  1. Surface should be clean and sound. Cement plaster/stucco substrates should be fully cured and be free of all bond-inhibiting contaminants.
  2. For pressure cleaning requirements, refer to Section 092410 - Portland Cement Plaster Repairing.

3. Remove dirt, splinters, loose particles, grease, oil, disintegrated coatings, and other foreign matter and substances deleterious to coating performance as specified for each substrate before application of paint or surface treatments.
    - a. Oil and grease shall be removed prior to mechanical cleaning.
    - b. Cleaning shall be programmed so that dust and other contaminants will not fall on wet, newly painted surfaces.
  4. Exposed ferrous metals such as nail heads on or in contact with surfaces to be painted with water-thinned paints, shall be spot-primed with a suitable corrosion-inhibitive primer capable of preventing flash rusting and compatible with the coating specified for the adjacent areas.
  5. Remove any blisters or delaminated areas and sand edges to smooth rough areas and provide transition to old paint areas.
  6. Check adhesion of old paint using ASTM D3359, measuring adhesion by Tape Method A.
- B. Additional Requirements for Surfaces with Existing Coatings:
1. Before application of new coatings, perform the following on surfaces covered by soundly-adhered coatings, defined as those which cannot be removed with a putty knife:
    - a. Wipe previously painted surfaces to receive solvent-based coatings, except stucco and similarly rough surfaces clean with a clean, dry cloth saturated with mineral spirits, ASTM D235.
      - (1) Allow surface to dry. Wiping shall immediately precede the application of the first coat of any coating, unless specified otherwise.
    - b. Sand existing glossy surfaces to be painted to reduce gloss.
      - (1) Brush, and wipe clean with a damp cloth to remove dust.
    - c. The requirements specified are minimum. Comply also with the application instructions of the paint manufacturer.
    - d. Previously painted surfaces specified to be repainted or damaged during construction shall be thoroughly cleaned of all grease, dirt, dust or other foreign matter.
    - e. Blistering, cracking, flaking and peeling or other deteriorated coatings shall be removed.
    - f. Chalk shall be removed so that when tested in accordance with ASTM D4214, the chalk resistance rating is no less than 8.
    - g. Slick surfaces shall be roughened. Damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls shall be repaired with suitable material to match adjacent undamaged areas.
    - h. Edges of chipped paint shall be feather edged and sanded smooth.
    - i. Rusty metal surfaces shall be cleaned as per SSPC requirements.
      - (1) Solvent, mechanical, or chemical cleaning methods shall be used to provide surfaces suitable for painting.
    - j. New, proposed coatings shall be compatible with existing coatings.
  2. Existing Coated Surfaces with Minor Defects:
    - a. Sand, spackle, and treat minor defects to render them smooth.
      - (1) Minor defects are defined as scratches, nicks, cracks, gouges, spalls,

- alligating, chalking, and irregularities due to partial peeling of previous coatings.
- b. Remove chalking by sanding or blasting so that when tested in accordance with ASTM D4214, the chalk rating is not less than 8.
- 3. Removal of Existing Coatings: Remove existing coatings from the following surfaces:
  - a. Surfaces containing large areas of minor defects.
  - b. Surfaces containing more than 20 percent peeling area.
  - c. Surfaces designated by the OWNER, such as surfaces where rust shows through existing coatings.
- 4. Cement Plaster/Stucco Substrate Repairs:
  - a. Repair cracks, holes, spalled/delaminated areas, and other defects in existing cement plaster/stucco surfaces using appropriate repair materials; verify compatibility of repair materials with coating system prior to use. Remove any protruding concrete accessories and smooth out any irregularities.
  - b. For additional requirements, refer to Section 092410 - Portland Cement Plaster Repairing.
- C. Additional Requirements for New (Previously Uncoated) Surfaces:
  - 1. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
  - 2. Surfaces:
    - a. Correct defects and clean surfaces that affect work of this section.
    - b. Remove or repair existing coatings that exhibit surface defects.
    - c. Mask surfaces that are not to be finished, or that are to be finished at a later time.
  - 3. Marks: Seal with shellac that which may bleed through surface finishes.
  - 4. Impervious Surfaces:
    - a. Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach.
    - b. Rinse with clean water and allow surface to dry.
  - 5. New Cement Plaster Surfaces to be Painted:
    - a. Fill hairline cracks, small holes, and imperfections with same patching materials used for similar repairs to existing plaster; for additional requirements, refer to Section 092410 - Portland Cement Plaster Repairing.
    - b. Make smooth and flush with adjacent surfaces.
    - c. Wash and neutralize high alkali surfaces.

### 3.03 APPLICATION

- A. General:
  - 1. Apply products in accordance with manufacturer's instructions and recommendations as indicated in Product Data.
    - a. Primer and coating application shall conform to manufacturer's film thickness recommendations.
  - 2. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

3. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
  4. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- B. Additional Requirements for Cement Plaster (Stucco):
1. For uniformity of color, texture and sheen, use consistent application techniques throughout the Project.
  2. Apply coating material in two (2) coats; total dry film thickness (DFT) per manufacturer's requirements for 10-year warranty, but not less than 12 mils.
  3. Multiple coats may be required when color difference between existing and new coatings is significant.
  4. Maintain proper wet film thickness (WFT) during application, to ensure performance characteristics desired.
  5. Work to natural break in surfaces before stopping work.
  6. Work from wet edge with 50 percent overlap.
  7. Use sufficient material to obtain pinhole-free, consistent film build on treated surfaces.
  8. Priming:
    - a. Apply primer to all previously unpainted plaster/stucco, and to previously painted plaster/stucco that are chalking or friable (powdery) after power washing.
    - b. Fill porous surfaces with primer, and back-roll to eliminate pinholes. Apply by working material into pores, crevices and joints. Allow primer to dry before proceeding (typically 24 to 48 hours).
    - c. Apply finish coats after primer has dried, and in accordance with manufacturer's instructions.
  9. Application:
    - a. By Brush:
      - (1) Application by brush is recommended only for small inaccessible areas such as touch-ups.
      - (2) Use only nylon brushes.
    - b. By Roller:
      - (1) Use a 3/4 inch to 1-1/4 inch (12/5 mm to 32 mm) nap roller cover (lamb's wool)
      - (2) Completely saturate roller and keep it loaded with coating to building required thickness
      - (3) Roll coating in consistent fan-like pattern, to achieve uniform coating thickness.
      - (4) Cross-roll to achieve uniform thickness and maintain wet edge. Back-roll material in one direction, as stroke variations may result in uneven color and texture.
    - c. By Spray:
      - (1) Smooth Texture: Use airless equipment.
      - (2) Fine or Coarse Texture: Use heavy-duty sprayer designed for application of coatings that contain sand particles, with gun pressure of approximately

30 psi (0.21 MPa).

- (3) Back-rolling after spray application is strongly recommended, to achieve uniform coating thickness and texture.

### 3.04 CLEANING

A. Collect waste material that may constitute a fire hazard, place in closed metal containers, and remove daily from site.

### 3.05 SURFACES TO BE FINISHED

A. Paint the surfaces as specified in the Painting Schedule at end of this

Section. B. Do Not Paint or Finish the Following Items:

1. Items fully factory-finished (e.g., aluminum window frames and storefronts, fixed wall louvers, etc.), unless specifically noted.
2. Fire rating labels, equipment serial number and capacity labels.
3. Stainless steel items.
4. Interior surfaces, except as follows:
  - a. Interior surfaces of exterior steel doors and frames shall be painted to match exterior surfaces.

### 3.06 PAINTING SCHEDULE

A. Exterior Cement Plaster (Stucco) Surfaces:

1. Primer: One coat of Primer (Acrylic Primer for Use With Acrylic Waterproof Coating System).
2. Intermediate and Finish Coats: Two (2) coats of Acrylic Waterproof Coating System.
  - a. Total Dry Film Thickness (DFT): Per manufacturer's requirements for 10-year warranty, but not less than 12 mils.

END OF  
SECTION