

SECTION 09 96 53  
ELASTOMERIC COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Surface preparation and application of elastomeric coatings to the following exterior substrates:
1. Concrete.
  2. Concrete unit masonry.

1.2 ACTION SUBMITTALS

- A. Product Data: Technical data and product information for block fillers, primers, paints, and coatings, including label analysis and instructions for handling, storing, surface preparation, and application for each paint and coating system.
1. For field painting of factory primed metal products and fabrications, submit technical data for each type of paint product, surface preparation requirements, and application instructions.
  2. Indicate manufacturer's instructions for special surface preparation procedures and substrate conditions requiring special attention.
  3. Product List: Provide inclusive list of required coating systems and materials. Indicate each material and cross reference specific coatings, finish system, and application. Identify each material by manufacturer's catalog number, series, and general classification. Use same designations indicated in Finish Schedules.
- B. Samples: Submit for each type of elastomeric coating indicated and each color and gloss.
1. Submit Samples on same type of substrate as that to receive application, 8 inches (200 mm) square.
  2. Apply coats on Samples in steps to show each separate coat, including primers and block fillers as applicable.
  3. Label each coat of each Sample.
  4. Label each Sample for location and application area.
- C. Product List: Cross reference to paint and coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with Federal and local toxicity and air quality regulations and with Federal requirements on content of for heavy metals including but

not limited to: lead and mercury. Do not use solvents in paint products that contribute to air pollution.

- B. Applicator Qualifications: Entity having minimum 5 years documented experience in applying paints and coatings similar in material, design, and extent to those indicated.
- C. Source Limitations: Obtain cementitious coating materials from single source and from single manufacturer.
- D. The Contractor shall coordinate the Project Schedule to allow compliance with the required application temperatures for the specific products specified, without substitution. Unspecified products that do not meet all criteria of this Section are subject to rejection.
  - 1. Lower Temperature Application Option: Refer to Part 2
- E. Mockups: Apply mockups of each coating system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Architect will select one surface to represent surfaces and conditions for application of each coating system.
    - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft (9 sq. m).
    - b. Other Items: Architect will designate items or areas required.
  - 2. Final approval of color selections will be based on mockups.
    - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
  - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.4 COORDINATION

- A. Coordination of Work: Coordinate field finishing of shop primed metals are provided to ensure compatibility of total systems for various substrates.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 degrees F (7 degrees C).
  - 1. Protect elastomeric coating materials from freezing or becoming hot.
  - 2. Maintain containers in clean condition, free of foreign materials and residue.

## 1.6 FIELD CONDITIONS

- A. Do not thin or add water to waterbased coatings, including waterbased alkyds.
- B. Weather Conditions:
  - 1. Apply coatings when temperature of surfaces to be treated and ambient air temperatures are between 50 degrees F and 95 degrees F (10 degrees C and 35 degrees C).
  - 2. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F (3 degrees C) above the dew point; or to damp or wet surfaces.
  - 3. Minimum Application Temperatures for Latex Coatings: 45 degrees F (7 degrees C) for interiors; 50 degrees F (35 degrees C) for exterior, unless otherwise indicated by manufacturer's Product Data Sheet.
- C. Lower Temperature Option: Refer to Part 2 for an option for lower temperature application. Installation shall be by a single product for the entire Project.
- D. Coating application may continue during inclement weather if surfaces and areas to receive paint and coatings are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.
- E. Provide lighting level of 80 foot candles (860 lx) measured midheight at substrate surface.
- F. Labels: Do not apply coatings over Underwriters Laboratories, Factory Mutual, other code required labels, or equipment name, identification, performance rating, or nomenclature plates.

## 1.7 WARRANTY

- A. Written warranty signed by manufacturer in which manufacturer agrees to repair or replace elastomeric coatings that fail within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Water penetration through the coating.
    - b. Deterioration of coating beyond normal weathering.
  - 2. Warranty Period: 10 years from date of Substantial Completion.

## 1.8 EXTRA MATERIALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Quantity: Furnish an additional 5 percent but not less than 1 gal. (3.8 L) of each material, color, and texture applied.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

#### A. Performance and Durability:

1. ASTM D 16 Standard Test Method for Load Testing Refractory Shapes at High Temperatures.
2. ASTM D 412 Rubber Properties in Tension.
3. ASTM D 16 53 Test Methods for Water Vapor Transmission of Organic Coating Films.
4. ASTM D 2486 Standard Test Method for Scrub Resistance of Interior Wall Paint.
5. ASTM D 2805 Standard Test Method for Hiding Power of Paints by Reflectometry.
6. ASTM D 4828 Standard Test Method for Practical Washability of Organic Coatings.

#### B. Material Compatibility:

1. Materials for use within each coating system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a coating system, products shall be recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

#### C. Chemical Components of Interior Paints and Coatings: Provide products complying with limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24). These requirements do not apply to paints and coatings applied in a fabrication or finishing shop.

1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
2. Restricted Components: Paints and coatings shall not contain components restricted by the EPA.

### 2.2 MATERIALS

#### A. Basis of Design: Conflex ConFlex XL Smooth Elastomeric High Build Coating A5-800 Series by Sherwin Williams; Subject to compliance with requirements, products by one of the following may also be acceptable:

1. BASF Building Systems: MasterProtect EL 750.
2. Kelly-Moore: Kelly-Moore Premium; Kel-Seal Urethane Modified Acrylic Elastomeric Coating DU0080920.
3. PPG: Perma-Crete Pitt-Flex Elastomeric Coating 4-110.
4. Pratt & Lambert: Pro-Hide Gold; Exterior Elastomeric Coating Z6000.
5. Sto: StoSilco Lastic; StoSilco Lastic 80222.

#### B. Substitutions: Not Permitted.

1. Refer to the Lower Application Temperature Option article of this Section for the sole solution for applications in lower temperatures. Installation shall be by a single product for the entire Project.
- C. Elastomeric Coating: Factory formulated, 100 percent acrylic or silicone emulsion finish coating materials, compatible with substrate, filler, and primer required.
  1. Physical Properties:
    - a. Elongation at Break: Not less than 240 percent when tested according to ASTM D 412 or ASTM D 2370.
    - b. Low Temperature Flexibility: Passes 1/8 inch, 180 degree mandrel bend at minus 10 degrees F at 20 mil dry film thickness when tested according to ASTM D 552.
    - c. Tensile Strength: Not less than 220 psi when tested according to ASTM D 412 or ASTM D 2370.
    - d. Water Vapor Permeability: Not less than 10 perms when tested according to ASTM D 1653 or ASTM E 96.
    - e. Wind Driven Rain Test: No water penetration when tested according to ASTM D 6904.
    - f. Minimum Dry Film Thickness per Coat: Not less than 10 mils.
    - g. Minimum Solids Content by Volume: Not less than 45 percent.
- D. Moisture Vapor Transmission: Minimum 34.4 perms, based on testing according to ASTM D1653.
- E. Texture: Medium.
- F. Colors: Selected by Architect from manufacturer's standard range.
- G. Crack Fillers: Elastomeric coating manufacturer's recommended, factory formulated crack fillers or sealants, including crack filler primers, compatible with substrate and other materials indicated.
- H. Primer: Elastomeric coating manufacturer's recommended, factory formulated, alkali resistant primer compatible with substrate and other materials indicated.
- I. Concrete Unit Masonry Block Filler: Elastomeric coating manufacturer's recommended, factory formulated, high performance latex block filler compatible with substrate and other materials indicated.

### 2.3 LOWER APPLICATION TEMPERATURE OPTION

- A. The Basis of Design and other listed products are susceptible to freezing and shall not be applied outside the indicated temperature conditions. The only acceptable option for lower application temperatures is as included in this Article. Installation shall be by a single product for the entire Project; exercising this option requires the same material to be applied for all elastomeric coating areas of the Project.
  1. Silicone Elastomeric Coating: Single component pigmented silicone elastomer.
  2. Coating properties meeting the following:

- a. Solids Content: 58.6 percent by weight; 50.1 percent by volume when tested in accordance with ASTM D 2369.
  - b. Specific Gravity: 9.64 lb / gallon when tested in accordance with ASTM D 1475.
  - c. Durometer Hardness, Shore A: 38 points when tested in accordance with ASTM D 2240.
  - d. Tensile Strength: >145 psi when tested in accordance with ASTM D 412.
  - e. Elongation: 600 Percent when tested in accordance with ASTM D 412.
  - f. Permeance: 43.2 English Perms per ASTM D 1653.
  - g. Fungus Resistance: No growth when tested in accordance with ASTM D 3274.
  - h. Wind Driven Rain: Pass when tested in accordance with ASTM D 6904.
  - i. Freeze/Thaw Resistance: No change when tested in accordance with ASTM D 2243.
3. Basis of Design: DOWSIL AllGuard Silicone Elastomeric Coating. May be applied only within the temperature limitations indicated in the manufacturer's published literature.

## 2.4 SOURCE QUALITY CONTROL

- A. Testing of Paints and Coating Materials: Owner reserves the right to invoke the following procedure:
1. Owner will engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to project site, samples may be taken at project site. Samples will be identified, sealed, and certified by testing agency.
  2. Testing agency will perform tests for compliance with product requirements.
  3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint and coating materials from project site, pay for testing, and recoat surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted or coated surfaces if, on repainting and recoating with complying materials, the two paint and coating products are incompatible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with manufacturer's requirements for maximum moisture content, alkalinity, and conditions affecting performance of work.
- B. Test substrates for moisture and alkalinity after repairing and cleaning substrates but prior to application of paint and coatings.

1. Commence coating when moisture content of substrate is 12 percent or less when measured with an electronic moisture meter.
- C. Begin coating no sooner than 28 days after substrate is constructed and is visually dry on both sides.
- D. Verify substrate is within the range of alkalinity recommended by manufacturer.
- E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- F. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
  1. Verify previously painted surfaces can be stripped to bare substrate, repaired if necessary, and prepared to receive new paint or coating system consisting of primer and two top coats at a minimum.
    - a. Where previously painted surfaces failed to accept new coating systems, determine cause of failure and take corrective measures to ensure each surface accepts new paint or coating system. Failure of new paint or coating systems is not permitted.
- G. Commence coating application after correcting unsatisfactory conditions and surfaces are dry.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated.
- B. Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.
  1. After completing coating operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface applied protection if any.
- C. Clean substrates of substances that could impair bond of coatings, including dirt, oil, grease, and incompatible paints, coatings and encapsulants. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
  1. Remove incompatible primers and reprime substrate with compatible primers as required to produce coating systems indicated.
  2. Perform cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.
  3. Cementitious Surfaces: Prepare surfaces of concrete, concrete masonry, stucco, and similar surfaces to receive elastomeric coatings by removing efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar conditions by water blasting followed by a clear water rinse.

4. Remove mildew and neutralize surfaces according to manufacturer's recommendations before materials are applied.
  5. Determine alkalinity and moisture content of surfaces to be coated by testing. Do not apply coatings over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
- D. Crack Repair: Fill cracks according to manufacturer's written instructions before coating surfaces.

### 3.3 APPLICATION

- A. Apply elastomeric coatings according to manufacturer's written instructions.
1. Use equipment and techniques best suited for substrate and type of material being applied.
  2. Coat surfaces behind movable items the same as similar exposed surfaces.
  3. Apply each coat separately according to manufacturer's written instructions.
- B. Primers: Apply at a rate to ensure complete coverage.
- C. Block Fillers: Apply at a rate to ensure complete coverage with pores filled.
- D. Elastomeric Finish Coat(s): Minimum two coats with a total dry film thickness of 16 to 18 mils (0.41 to 0.45 mm).
- E. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats similar to color of topcoat but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- F. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform finish, color, and appearance.
- G. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- H. Apply coatings to prepared surfaces as soon as practicable after preparation and before subsequent surface soiling or deterioration.
- I. Spray Application: Use spray equipment for application when permitted by authorities having jurisdiction. Wherever spray application is used, do not double back with spray equipment to build up film thickness of two coats in one pass.

### 3.4 FIELD QUALITY CONTROL

- A. Testing of Paint and Coating Materials: Owner reserves the right to invoke the following testing procedures:
1. Owner will engage the services of a qualified testing agency to sample materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.

2. Testing agency will perform the following tests for compliance of materials with product requirements.
    - a. Quantitative materials analysis.
    - b. Elongation at break.
    - c. Tensile strength.
    - d. Percent of recovery.
    - e. Resistance to wind driven rain.
    - f. Water vapor transmission.
  3. Owner may direct Contractor to stop coating application if test results show materials being used do not comply with requirements. Remove noncomplying materials from Project site, pay for testing, and recoat surfaces that were coated with rejected materials. Remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.
- B. Field Testing and Inspection: Owner reserves the right to engage the services of a qualified testing agency to verify installed thickness of elastomeric coatings.

### 3.5 CLEANING AND PROTECTION

- A. At end of each day, remove rubbish, empty cans, rags, and discarded materials from project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities, touch up and restore damaged or defaced coated surfaces.

### 3.6 COATING SCHEDULE

- A. Concrete: Two finish coats over primer with total dry film thickness not less than 20 mils.
  1. Primer: Manufacturer's recommended primer.
  2. First Coat: Elastomeric coating.
  3. Second Coat: Elastomeric coating.
- B. Concrete Masonry (CMU): Two finish coats over block filler with a total dry film thickness not less than 20 mils, excluding block filler.
  1. Block Filler: Manufacturer's recommended masonry block filler.
  2. First Coat: Elastomeric coating.
  3. Second Coat: Elastomeric coating.

END OF SECTION