

## **EXTERIOR PAINTING SECTION 09 91 13**

### **PART 1 GENERAL**

#### **1.01 SUMMARY**

**A. Inclusions:**

1. Provisions set forth in Divisions 0 and 1;
2. Surface Preparation:
  - a. Sanding, scraping, putty work, and cleaning of work to be painted.
  - b. Washing, priming, and backpriming of sheet metal work.
3. Painting, except factory finished materials:
  - a. Exterior surfaces.
  - b. Metal work, and trim.
  - c. Other normally painted surfaces.
  - d. If color of finish is not specifically listed on the Color Schedule, the Architect shall select from standard colors and finishes available.
  - e. Existing work shall be painted where specified.
  - f. Backpriming of wood and metal work;
  - g. Sealing of masonry or concrete surfaces;
  - h. Painting on exposed concrete block surfaces;
  - i. Painting of handrails;
  - j. Touch-up painting;
  - k. Labor, materials, tools, and equipment;
  - l. Preparation of submittals;
  - m. Clean up.

**B. Related Sections:**

1. Section 04 22 00: Reinforced Concrete Unit Masonry
2. Section 05 12 10: Handrails and Guardrails

**C. Performance Requirements:**

1. Complete coverage, void of blemishes.

**D. References:**

1. ASTM D16 Standard Terminology for Paint, Related Coatings, Materials, and Applications.

#### **1.02 DEFINITIONS**

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 2: Not more than 10 units at 60 degrees and 35 units at 85 degrees, according to ASTM D 523.

- C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. Gloss Level 5: 35 to 70 units at 60 degrees according to ASTM D 523.
- F. Gloss Level 6: 70 to 85 units at 60 degrees according to ASTM D 523.
- G. Gloss Level 7: More than 85 units at 60 degrees according to ASTM D 523.
- H. EG: Ethylene Glycol. Ethylene glycol is listed as a hazardous air pollutant (HAP) by the U.S. EPA.
- I. Blocking: Two painted surfaces sticking together such as a painted door sticking to a painted jamb.
- J. RAVOC: Reactivity adjusted VOC 'Reactivity means the ability of a VOC to promote ozone formation.
- K. PDCA: Painting & Decorating Contractors of America [www.pdca.org](http://www.pdca.org).
- L. SSPC: SSPC Surface Preparation Standards and Specifications [www.sspc.org](http://www.sspc.org).
- M. Green Wise: Green Wise products are tested in an ISO accredited laboratory to meet environmentally determined performance standards established by Coatings Research Group, Inc.

### **1.03 SUBMITTALS**

- A. Product or Material Data:
  - 1. Submit product description and test data for all proposed products or materials for review and acceptance by Architect prior to start of work.
  - 2. Submit preparation, priming, and application instructions for each material proposed for use over job specific substrates.
  - 3. Substitutions shall show a line-by-line item review between the substituted product and the specified product for comparison and the specified Dunn-Edwards or Glidden Professional product in the paint schedule. The comparison shall include:
    - a. % Titanium Dioxide
    - b. % Solids by Weight
    - c. Type of vehicle
    - d. Solvent type
    - e. VOC content - Also list allowance per the Calif. Green Building Code

- f. Finish
  - g. MPI rating
  - h. Scrub test results
- 4. It will be the discretion of the Architect to accept proposed substitutions.

**B. Samples or Mockups:**

- 1. Submit a complete set of color selection samples of proposed materials for color selection by Architect prior to ordering materials.
- 2. Submit 8"x10" minimum size brush-out color samples of colors selected for use by the Architect.

## **1.04 QUALITY ASSURANCE**

**A. Regulatory Compliance:**

- 1. Materials must meet the standard set by the State of California for environmental protection and hazardous material content.
- 2. California Green Building Code

**B. Single Source Responsibility:**

- 1. Provide primers and undercoat products from the same manufacturer as the finish coats.
- 2. Review other sections in which primers are provided to ensure compatibility of the total coating systems for various substrates. On request, furnish information on characteristics or finish materials to ensure use of compatible primers.

**C. Manufacturer Qualifications:**

- 1. Company specializing in manufacturing the products specified with minimum of three (3) years of documented experience.

**D. Applicator Qualifications:** Company specializing in performing the type of work specified with minimum three (3) years of experience and approved by manufacturer.

## **1.05 ENVIRONMENTAL REQUIREMENTS**

**A. Contractor shall ensure that temperatures, relative humidity, and other environmental conditions for material storage, handling, and installation are maintained within the manufacturer's suggested limits.**

- 1. Apply water-based paints only when the temperature of surfaces to be painted and air temperatures is between 50 and 90 degrees F.
- 2. Apply solvent-based paints only when the temperature of the surfaces to be painted and the air temperature is between 45 and 95 degrees F.
- 3. Do not apply paints in snow, fog, rain, or misty conditions when the relative humidity exceeds 85% or when temperatures are less than 5 degrees above the dew point, or to damp or wet surfaces.

**B. Provide adequate lighting for proper installation of materials.**

- C. Provide adequate ventilation for proper installation of materials.
- D. Paints, primers, and thinners shall not contain any organic compounds or metals prohibited for use in these products in California.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Handling, storage, and application of the materials covered under this Section of the specifications shall be performed in accordance with the manufacturer's latest written recommendations.
- B. Materials shall be delivered to the site in original unopened containers showing the brand name and product identification number, date of manufacture, color name and number, and VOC content.
- C. Rejected materials shall be immediately removed from the site.
- D. Take precautions to minimize the potential for accumulation of paint fumes and the potential for fire.

#### **1.07 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 paint and finishes during rain or snow or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperature for Latex Paints: 50 °F for exterior unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 foot-candles measured mid-height at substrate surface.

### **PART 2 PRODUCTS**

#### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Dunn Edwards.
- B. Benjamin Moore;
- C. Sherwin Williams;

- D. Glidden Professional
- E. Devoe Coatings
- F. Tnemec Industrial Coatings
- G. Carboline

## 2.02 MATERIALS

- A. Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.
  - 1. Provide paints and finishes of a soft past 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.
- B. Use only the highest quality products from the manufacturer's product line.
  - 1. Do not reduce, thin or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- C. All coats shall be the products of the same manufacturer.
- D. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.
- E. Colorants: The use of colorants containing hazardous chemicals, such as ethylene glycol, is prohibited.
- F. Flammability: Comply with applicable code for surface burning characteristics.
- G. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by the Architect from the manufacturer's full line.
- H. Colors: Refer to "Color Schedule".

## 2.03 ACCESSORY MATERIALS

- A. Accessory materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Inspect all surfaces to receive paint.
  - 1. Application of paint indicates an acceptance of the underlying surface.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Concrete: 12 percent
  - 2. Masonry (Clay and CMU): 12 percent
  - 3. Portland Cement Plaster: 12 percent
- C. Portland Cement Plaster Substrates: Verify that plaster is fully cured, including pH testing to determined that alkalinity is within limits established by the manufacturer.
- D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- E. Proceed with coating application only after unsatisfactory conditions have been corrected.
- F. Application of coating indicates acceptance of surfaces and conditions.

### **3.02 PREPARATION**

- A. General:
  - 1. Remove hardware and hardware access, plates, machined surfaces, light fixtures, and similar items in places that are not to be painted or provide surface-applied protection prior to surface preparation and painting. Remove these items if necessary, for complete painting of the items and adjacent surfaces. Coordinate removal of items with the appropriate trade and Construction Manager. Clean surfaces before applying paint or surface treatments. Remove oils and grease from surfaces prior to final cleaning of surfaces.
    - a. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
  - 2. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces. Items shall be reinstalled in the same manner that they were removed.
    - a. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

**B. Concrete, Masonry, and Stucco:**

1. Prepare concrete, masonry, and stucco surfaces to be painted by removing efflorescence, caulk, dust, dirt, grease, oils, and other forms of release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
  - a. Use abrasive blast cleaning methods if recommended by the paint manufacturer.
  - b. Determine alkalinity and moisture content of surfaces by performing appropriate test. Pay special attention to concrete masonry unit mortar joints and patch concrete surfaces with Ardex or other approved patching compounds. If surfaces are sufficiently alkaline to cause blistering and burning of finished paint, correct the condition before application per manufacturer's recommendation. Do not paint surfaces where moisture content of surfaces exceeds that permitted in the manufacturer's printed directions.
  - c. Clean concrete floors to receive paint or coatings with a 5% muriatic acid. Flush the floor with water to remove the acid, neutralize with ammonia, then water rinse and allow drying before painting.

**C. Metal:**

1. Remove oil grease, mill scale, rust, corrosive materials, and other soluble contaminants using solvents, or cleaning compounds in conjunction with wiping, dipping, steam cleaning, or degreasing.
2. Wash and etch galvanized material.
3. Touch up any abrasions or chips in mill finish prior to application of finish, assuring compatibility of touch-up and patching material with subsequent paint system to be applied.
4. Follow the Structural Steel Painting Council (SSPC) recommendations.
5. Prime the surfaces immediately after preparation.

**3.03 SEQUENCING AND SCHEDULING**

- A. Sequence work to avoid potential damage from other trades.

**3.04 INSTALLATION OR APPLICATION**

- A. Apply paint per Section 3.09 "PAINT SCHEDULE" at the end of this spec section.
- B. Application shall be in accordance with the manufacturer's latest written recommendations.

- C. Mixing and Thinning: Unless otherwise recommended by the manufacturer, paints may be thinned immediately prior to application with an approved manufacturer's thinner and used only within recommended limits of the printed directions when necessary to suit conditions of surface temperature, weather, and application methods. The use of thinner shall not relieve the Contractor from obtaining complete hiding, film thickness, or required gloss. Paints of different manufacturers shall not be mixed.
- D. Additional Requirements:
  - 1. Each coat shall be tinted a slightly different shade.
  - 2. Paint areas visible through grills, screens, or registers flat black.
  - 3. Door tops, bottoms, and edges shall receive the same finish as door faces.
- E. Shop-primed steel to be painted shall receive an additional field-applied primer coat per the schedule below. The shop coating shall be considered as a protective coat to inhibit rust during storage and erection. Prior to re-priming, clean all surfaces per SSPC SC-1 with non-petroleum based solvent cleaner.
- F. Block fillers: Provide block fill as scheduled to conform to the following per PDCA Standard P 12-05:
  - 1. Level 3 – Premium fill: One or multiple coats of high-performance block filler manufactured to be applied at a high dry film build. Block filler shall be back rolled to eliminate voids and reduce the majority of the masonry profile depth.
- G. Paint may be sprayed when approved by Architect. Non-metal surface (when allowed to be sprayed) must be properly back brushed or rolled.

### **3.05 QUALITY CONTROL**

- A. Tolerances:
  - 1. No holidays, sags, runs, crawls, brush marks, or other blemishes.
  - 2. All primers and finish coats shall be applied at manufacturers recommended spread rates to produce manufacturer's recommended dry film thickness per coat.
- B. Field Inspection:
  - 1. Project Inspector
  - 2. Architect of Record
  - 3. Owner Representative
- C. Dry Film Thickness Testing: Owner may engage the service of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
  - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
  - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.



### **3.06 CLEANING OR REPAIR**

- A. Keep premises clean during the progress of the work.
- B. Painting shall not occur during dusty conditions.
- C. Thoroughly clean-up work and adjacent areas upon completion of the work.
- D. Sweep areas clean.
- E. Remove tools, excess materials, and debris from site.
- F. Remove spilled or spattered paint.
- G. Touch up all scratched or damaged paint.
- H. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing and refinishing, as approved by Architect and leave in an undamaged condition.

### **3.07 CONDITION OF FINISHED WORK**

- A. Complete coverage.
- B. Sharp, true lines and edges.

### **3.08 EXTRA STOCK**

- A. Contractor shall provide extra stock of 5% of each type of paint/coating and color used in new unopened 1-quart containers.

### **3.09 PAINT SCHEDULE (Based on Dunn-Edwards Paints)**

- A. Concrete:
  - 1. Painted surfaces – Eggshell Finish:
    - a. 1<sup>st</sup> Coat (Primer):
      - 1) Primer, alkali resistant, water-based interior/exterior.
        - a) Benjamin Moore, Ultra Spec Masonry Primer 609
        - b) Dunn-Edwards, EFF-Stop Select ESSL00.
        - c) Sherwin Williams, Loxon Primer A24W8300
    - b. 2<sup>nd</sup> Coat:
      - 1) Exterior 100% Acrylic Eggshell
        - a) Benjamin Moore, Ultra Spec Ext Low Lustre N455
        - b) Dunn-Edwards, Spartashield SSSL30 (Gloss Level 3)
        - c) Sherwin Williams, A-100 Satin, A82-100 Series

- c. 3<sup>rd</sup> Coat:
      - 1) Exterior 100% Acrylic Eggshell
        - a) Benjamin Moore, Ultra Spec Ext Low Lustre N455
        - b) Dunn-Edwards, Spartashield SSSL30 (Gloss Level 3)
        - c) Sherwin Williams, A-100 Satin, A82-100 Series
  - 2. Painted surfaces – Semi-Gloss Finish:
    - a. 1<sup>st</sup> Coat (Primer):
      - 1) Primer, alkali resistant, waterbased, interior/exterior.
        - a) Benjamin Moore, Ultra Spec Masonry Primer 609
        - b) Dunn-Edwards, EFF-Stop Select ESSL00.
        - c) Sherwin Williams, Loxon Primer A24W8300
    - b. 2<sup>nd</sup> Coat:
      - 1) Exterior 100% Acrylic Semi-Gloss
        - a) Benjamin Moore, Ultra Spec Ext Satin N448
        - b) Dunn-Edwards, Spartashield SSSL50 (Gloss Level 5)
        - c) Sherwin Williams, A-100 Gloss
    - c. 3<sup>rd</sup> Coat:
      - 1) Exterior 100% Acrylic Semi-Gloss
        - a) Benjamin Moore, Ultra Spec Ext Satin N448
        - b) Dunn-Edwards, Spartashield SSSL50 (Gloss Level 5)
        - c) Sherwin Williams, A-100 Gloss
- B. Concrete Block:
- 1. Painted surfaces – Eggshell Finish:
    - a. 1<sup>st</sup> Coat (Filler):
      - 1) Latex block filler
        - a) Benjamin Moore, Ultra Spec Block Filler 571
        - b) Dunn-Edwards, Smooth BLOCFIL Premium SBSL00
        - c) Sherwin Williams, Preprite Block Filler B25W25
    - b. 2<sup>nd</sup> Coat:
      - 1) Exterior 100% Acrylic Eggshell
        - a) Benjamin Moore, Ultra Spec Ext Low Lustre N455
        - b) Dunn-Edwards, Spartashield SSSL30 (Gloss Level 3);
        - c) Sherwin Williams, A-100 Satin
    - c. 3<sup>rd</sup> Coat:
      - 1) Exterior 100% Acrylic Eggshell
        - a) Benjamin Moore, Ultra Spec Ext Low Lustre N455
        - b) Dunn-Edwards, Spartashield SSSL30 (Gloss Level 3)
        - c) .Sherwin Williams, A-100 Satin
  - 2. Painted surfaces – Semi-Gloss Finish:
    - a. 1<sup>st</sup> Coat (Filler):
      - 1) Latex block filler
        - a) Benjamin Moore, Ultra Spec Block Filler 571
        - b) Dunn-Edwards, Smooth BLOCFIL Premium SBSL00
        - c) Sherwin Williams, Prepate Block Filler B25W25

- b. 2<sup>nd</sup> Coat:
    - 1) Exterior 100% Acrylic Semi-Gloss
      - a) Benjamin Moore, Ultra Spec Ext Gloss N449
      - b) Dunn-Edwards, Spartashield SSSL50 (Gloss Level 5)
      - c) Sherwin Williams, A-100 Gloss
  - c. 3<sup>rd</sup> Coat:
    - 1) Exterior 100% Acrylic Semi-Gloss
      - a) Benjamin Moore, Ultra Spec Ext Gloss N449
      - b) Dunn-Edwards, Spartashield SSSL50 (Gloss Level 5)
      - c) Sherwin Williams, A-100 Gloss
- C. Metal Work:
- 1. Non-Ferrous Metals (galvanized)
    - a. 1<sup>st</sup> Coat (Primer):
      - 1) Galvanized Metal Primer
        - a) Benjamin Moore, Corotech Bonding Primer V175
        - b) Dunn-Edwards, Ultrashield Galvanized Metal Primer ULGM00
        - c) Sherwin Williams, DTM Wash Primer B71Y1
    - b. 2<sup>nd</sup> Coat:
      - 1) Exterior 100% Acrylic Semi-Gloss
        - a) Benjamin Moore, Corotech Acrylic DTM S/G V331
        - b) Dunn-Edwards, Spartashield SSSL50 (Gloss Level 5)
        - c) Sherwin Moore, PI WB Alkyd Urethane 53
    - c. 3<sup>rd</sup> Coat:
      - 1) Exterior 100% Acrylic Semi-Gloss
        - a) Benjamin Moore, Corotech Acrylic DTM S/G V331
        - b) Dunn-Edwards, Spartashield SSSL50 (Gloss Level 5)
        - c) Sherwin Williams, PI WB Alkyd Urethane 53
- D. Portland Cement Plaster:
- 1. Painted Eggshell Finish:
    - a. 1<sup>st</sup> Coat (Primer):
      - 1) Epoxy-fortified acrylic primer/sealer for interior and exterior
        - a) Benjamin Moore, Ultra Spec Masonry Primer 609
        - b) Dunn-Edwards, Eff-Stop Select ESSL00
        - c) Sherwin Williams, Loxon Primer A24W8300
    - b. 2<sup>nd</sup> Coat:
      - 1) Exterior 100% Acrylic Flat
        - a) Benjamin Moore, Ultra Spec Ext Flat N447
        - b) Dunn-Edwards, Spartashield SSSL10 (Gloss Level 1)
        - c) Sherwin Williams, A-100 Flat A6 Series
    - c. 3<sup>rd</sup> Coat:
      - 1) Exterior 100% Acrylic Flat
        - a) Benjamin Moore, Ultra Spec Ext Flat N447
        - b) Dunn-Edwards, Spartashield SSSL10 (Gloss Level 1)
        - c) Sherwin Williams, A-100 Flat A6 Series

- 2. Painted Elastomeric Finish:
  - a. 1<sup>st</sup> Coat (Primer):
    - 1) Epoxy-fortified acrylic primer/sealer for interior and exterior
      - a) Benjamin Moore, Ultra Spec Masonry Primer 609
      - b) Dunn-Edwards, Eff-Stop Select ESSL00
      - c) Sherwin Williams, Loxon Primer A24W8300
  - b. 2<sup>nd</sup> Coat:
    - 1) Durable elastomeric wall coating
      - a) Benjamin Moore, Ultra Spec Elastomeric 359, 360
      - b) Dunn-Edwards, Enduralastic 5
      - c) Sherwin Williams, Conlex Sherlastic Elastomeric CF16 Series

**END OF SECTION 09 91 13**