

SECTION 09 90 00
PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished, and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Non-metallic roofing and flashing.
 - 6. Stainless steel, anodized aluminum, bronze, terne, and lead items.
 - 7. Floors, unless specifically so indicated.
 - 8. Ceramic and other tiles.
 - 9. Glass.
 - 10. Acoustical materials, unless specifically so indicated.
 - 11. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 05 50 00 - Metal Fabrications: Shop-primed items.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D523 - Standard Test Method for Specular Gloss; 2014 (Reapproved 2018).
- C. GreenSeal GS-11 - Paints, Coatings, Stains, and Sealers; 2015.
- D. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.
- E. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- F. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).
- G. SSPC-SP 2 - Hand Tool Cleaning; 2018.

1.04 DEFINITIONS

- A. MPI Gloss Level 1: Matte or Flat Finish; Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- C. MPI Gloss Level 3: Eggshell Finish; 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- D. MPI Gloss Level 4: Satin Finish; 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.
- E. MPI Gloss Level 5: Semi-Gloss Finish; 35 to 70 units at 60 degrees, according to ASTM D523.
- F. MPI Gloss Level 6: Gloss Finish; 70 to 85 units at 60 degrees, according to ASTM D523.

- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- 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 number, and general product category (e.g. "alkyd enamel").
 - 2. Manufacturer's preparation requirements and application instructions.
- C. Samples for Verification: Submit one sample on rigid backing, 8 inch square, for each system and in each color and gloss level specified.
- D. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.
- E. Manufacturer's Instructions: Indicate special surface preparation procedures.
- F. Maintenance Data: Submit data on color, cleaning, touch-up, and repair of painted and coated surfaces.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Coatings: 1 gallon of each color; store where directed.
 - 3. Label each container with color in addition to the manufacturer's label.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum five years experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience.
- C. Material Safety Data Sheets: At project site maintain file of MSDS sheets for each product used; become familiar with and follow manufacturer's stated application and safety requirements.

1.07 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. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

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. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

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. Standard Paints: Subject to compliance with requirements, provide products by one of the following:

1. Sherwin-Williams Company: www.sherwin-williams.com.
- C. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
 1. 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.
 2. 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.
 3. Supply each coating material in quantity required to complete entire project's work from a single production run.
 4. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate or color, use primer tinted to the shade and categorized as "best" recommended for that color or substrate by the manufacturer.
- 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, National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Architectural coatings VOC limits of the State in which the Project is located.
 2. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
 3. Patching Material: Latex filler.
 4. Fastener Head Cover Material: Latex filler.

2.03 PAINT SYSTEMS - GENERAL

- A. Provide Premium Grade systems, as defined by MPI (APSM), except as otherwise indicated.
- B. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.
- C. Provide two top coats and one primer coat unless noted otherwise indicated. Provide primer as recommended by manufacturer of top coat.
- D. Colors: As indicated on drawings, or as selected by Architect Engineer.

2.04 PAINT SYSTEMS - EXTERIOR

- A. Exterior Ferrous Metals, Primed, Latex: Quick dry enamel.
 1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
 2. Approved Products:
 - a. Sherwin Williams
 - 1) Primer: Pro Industrial Pro-Cryl Universal Metal Primer B66-1300 Series;
 - 2) Two Coats: Pro Industrial Acrylic Semi-Gloss B66-650 Series.
- B. Exterior Galvanized Metals, not chromate passivated: Latex.
 1. Approved Products:
 - a. Sherwin Williams
 - 1) Primer: Pro Industrial Pro-Cryl Universal Metal Primer B66-1300 Series;
 - 2) Two Coats: Pro Industrial Acrylic Semi-Gloss B66-650 Series.
- C. Exterior Aluminum , Unprimed, Alkyd, 3 Coats: Latex.
 1. Approved Products:
 - a. Sherwin Williams

- 1) Primer: Pro Industrial Pro-Cryl Universal Metal Primer B66-1300 Series;
- 2) Two Coats: Pro Industrial Acrylic Semi-Gloss B66-650 Series.

2.05 PAINT SYSTEMS - INTERIOR

- A. Interior, Medium Duty Door and Trim:
 1. Approved Products:
 - a. Sherwin-Williams
 - 1) Primer: Pro Industrial Pro-Cryl Universal Metal Primer B66-1300 Series;
 - 2) Two Coats: Pro Industrial WB Alkyd Urethane Enamel Semi-Gloss B53-1150 Series.
- B. Interior Gypsum Board, Epoxy:
 1. Approved Products:
 - a. Sherwin-Williams
 - 1) Primer: Preprite Hi Build Primer B28W8601;
 - 2) Two Coats: Water Based Catalyzed Epoxy Semi Gloss/Gloss B70W211/B60V25/15.
 - b. Sherwin-Williams
 - 1) Primer: ProMar 200 Zero VOC Primer B28W2600;
 - 2) Two Coats: Pro Industrial Pre-Catalyzed Epoxy Egshel/Semi Gloss K45/46W0151.
 - c. Sherwin-Williams (Wet Areas)
 - 1) Primer: Promar 200 Zero VOC Latex Primer B28W2600;
 - 2) Two Coats: Pro Industrial Water-Based Catalyzed Epoxy Gloss/Eg-Shel, B73-300 Series.
- C. Bituminous-Coated Substrates:
 1. Approved Products:
 - a. Sherwin-Williams
 - 1) Primer: Pro-Cryl Universal Metal Primer B66-1300 Series;
 - 2) Two Coats: Pro Industrial Acrylic Semi-Gloss B66-650 Series.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of coatings until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect Engineer of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 1. Gypsum Wallboard: 12 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
 1. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before preparation and finishing.

2. After completing painting in each space or area, reinstall items removed using workers skilled in the trades involved.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- G. Asphalt, Creosote, or Bituminous Surfaces to be Painted: Remove foreign particles to permit adhesion of finishing materials. Apply latex based sealer or primer.
- H. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. Corroded Steel and Iron Surfaces to be Painted: Prepare using at least SSPC-SP 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).
- J. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand or power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- K. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
- L. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance.
- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.
- H. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.
 1. Brush Application: Use brushes best suited for the type of material applied; use brush of appropriate size for the surface or item being painted; produce results free of visible brush marks.
 2. Roller Application: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 3. Spray Application: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
 4. Where application method is listed in the MPI Manual for the paint system that application method is required; otherwise any application method recommended by manufacturer for material used and objects to be painted is acceptable.

- I. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.
 - 1. Number of coats and film thickness required are the same regardless of application method.
 - 2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.
 - 3. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent to that of flat surfaces.
- J. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.
 - 1. Before applying finish coats, apply a prime coat of material recommended by manufacturer, unless the surface has been prime coated by others; where evidence of suction spots or unsealed areas in first coat appear, recoat primed and sealed surfaces to ensure finish coat with no burn through or other defects due to insufficient sealing.
 - 2. Apply first coat to surface that has been cleaned, pretreated, or otherwise prepared as soon as practical after preparation and before subsequent surface deterioration.
 - 3. Do not apply succeeding coats until the previous coat has cured as recommended by manufacturer.
 - 4. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat will not cause the undercoat to lift or lose adhesion.
 - 5. If manufacturer's instructions recommend sanding to produce a smooth, even surface, sand between coats.
 - 6. Before applying next coat vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

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