

DIVISION 04

FINISHES

SECTION 04900

PAINTS AND COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.
- C. Painting materials and methods for conduit identification specified in Section 16075.
- D. See Schedule - Surfaces to be finished, at end of Section.

1.02 REFERENCES

- A. ASTM D 16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- B. ASTM D 4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
- C. NPCA (US) - Guide to U.S. Government Paint Specifications; National Paint & Coatings Association.
- D. SSPC (PM1) - Steel Structures Painting Manual, Vol. 1, Good Painting Practice; Society for Protective Coatings.
- E. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications; Society for Protective Coatings.
- F. Use the latest issue of the above reference standards as of the date of the Project.

1.03 DEFINITIONS

- A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all finishing products.
- C. Samples: Submit one paper chip samples, 2 x 2 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years' experience.

1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable International Fire and Building Codes for flame and smoke rating requirements for products and finishes.

1.07 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 and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 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 snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- 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. Paints:
 - 1. Benjamin Moore & Co.
 - 2. Sherwin-Williams Co.
- B. Substitutions: See Section 01600 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

- A. 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.
- B. Colors to be selected by the Owner from the manufacturer's standard colors and shall be approved by the City Planner.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Paint WE-OP-3A - Wood, Opaque, Latex, 3 Coat:

1. One coat of latex primer sealer.
 2. Semi-gloss: Two coats of latex enamel.
- B. Paint ME-OP-3A - Ferrous Metals, Unprimed, Latex, 3 Coat:
1. One coat of latex primer.
 2. Semi-gloss: Two coats of latex enamel.
- C. Paint ME-OP-3L - Ferrous Metals, Unprimed, Latex, 3 Coat:
1. One coat of latex primer.
 2. Semi-gloss: Two coats of latex enamel.
- D. Paint ME-OP-2A - Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch-up with zinc chromate primer.
 2. Semi-gloss: Two coats of latex enamel.
- E. Paint ME-OP-2L - Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch-up with zinc chromate primer.
 2. Semi-gloss: Two coats of latex enamel.
- F. Paint MgE-OP-3A - Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
 2. Semi-gloss: Two coats of latex enamel.
- G. Paint MgE-OP-3L - Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
 2. Semi-gloss: Two coats of latex enamel.

2.04 PAINT SYSTEMS - INTERIOR

- A. Paint WI-OP-3A - Wood, Opaque, Latex, 3 Coat:
1. One coat latex primer sealer.
 2. Semi-gloss: Two coats of latex enamel.
- B. Paint WI-OP-3L - Wood, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
 2. Semi-gloss: Two coats of latex enamel.
- C. Paint CI-OP-3A - Concrete/Masonry, Opaque, Latex, 3 Coat:
1. One coat of block filler.
 2. Semi-gloss: Two coats of latex enamel.

- D. Paint CI-OP-3L - Concrete/Masonry, Opaque, Latex, 3 Coat:
 - 1. One coat of block filler.
 - 2. Semi-gloss: Two coats of latex enamel.
- E. Paint MI-OP-3A - Ferrous Metals, Unprimed, Latex, 3 Coat:
 - 1. One coat of latex primer.
 - 2. Semi-gloss: Two coats of latex enamel.
- F. Paint MI-OP-3L - Ferrous Metals, Unprimed, Latex, 3 Coat:
 - 1. One coat of latex primer.
 - 2. Semi-gloss: Two coats of latex enamel.
- G. Paint MGI-OP-3A - Galvanized Metals, Latex, 3 Coat:
 - 1. One coat galvanize primer.
 - 2. Semi-gloss: Two coats of latex enamel.
- H. Paint MGI-OP-3L - Galvanized Metals, Latex, 3 Coat:
 - 1. One coat galvanize primer.
 - 2. Semi-gloss: Two coats of latex enamel.
- I. Paint CI-OP-3Af - Concrete/Masonry, Latex Floor Enamel, 3 Coat:
 - 1. One coat of alkali resistant primer.
 - 2. Gloss: Two coats of latex floor enamel.
- J. Paint CI-OP-3E - Concrete/Masonry, Epoxy Enamel, 3 Coat:
 - 1. One coat of catalyzed epoxy primer.
 - 2. Gloss: Two coats of catalyzed epoxy enamel.
- K. Paint GI-OP-3A - Gypsum Board/Plaster, Latex, 3 Coat:
 - 1. One coat of latex primer sealer.
 - 2. Semi-gloss: Two coats of latex enamel.
- L. Paint GI-OP-3L - Gypsum Board/Plaster, Latex, 3 Coat:
 - 1. One coat of latex primer sealer.
 - 2. Semi-gloss: Two coats of latex enamel.
- M. Paint GI-OP-3LA - Gypsum Board/Plaster, Latex-Acrylic, 3 Coat:
 - 1. One coat of latex primer sealer.

2. Semi-gloss: Two coats of latex-acrylic enamel.

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

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.
- C. Test shop-applied primer for compatibility with subsequent cover materials.
- D. 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. Plaster and Gypsum Wallboard: 12 percent.
 2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 3. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.
 4. Exterior Wood: 15 percent, measured in accordance with ASTM D 4442.
 5. Concrete Floors: 8 percent.

3.02 PREPARATION

- A. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- C. Marks: Seal with shellac those which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- F. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- G. 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.

- H. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. 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 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.
- J. 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.
- K. Interior Wood Items 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.
- L. Exterior Wood to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied. 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. Apply each coat of paint slightly darker than preceding coat.
- E. Sand wood 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.

3.04 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Refer to Section 15075 and Section 16075 for schedule of color coding of equipment, duct work, piping, and conduit.
- B. Paint shop-primed equipment, where indicated.
- C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- D. Finish equipment, piping, conduit, and exposed duct work in utility areas in colors according to the color coding scheme indicated.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.05 FIELD QUALITY CONTROL

- A. See Section 01400 - Quality Requirements, for general requirements for field inspection.
- B. Owner will provide field inspection.

3.06 CLEANING

- A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site. Dispose of any such waste material in a legally acceptable manner.

3.07 SCHEDULE - SURFACES TO BE FINISHED

- A. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically noted.
 - 2. Fire rating labels, equipment serial number and capacity labels.
 - 3. Stainless steel items.
- B. Paint the surfaces described below under Schedule - Paint Systems.
- C. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
 - 1. Paint all insulated and exposed pipes, conduit, boxes, mechanical equipment, and electrical equipment occurring in finished areas, unless otherwise indicated.
 - 2. Paint shop-primed items occurring in finished areas.
- D. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

3.08 SCHEDULE - PAINT SYSTEMS

- A. Concrete, Concrete Block, Brick Masonry: Finish all surfaces exposed to view, as indicated.
 - 1. Interior: CI-OP-3L, semi-gloss.
- B. Gypsum Board: Finish all surfaces exposed to view.
 - 1. Interior Ceilings and Bulkheads: GI-OP-3L, flat.
 - 2. Interior Walls: GI-OP-3A, semi-gloss.
- C. Wood: Finish all surfaces exposed to view.
 - 1. Exterior trim and frames: WE-OP-3A.
 - 2. Interior trim and frames: WI-OP-3A, semi-gloss.
- D. Steel Fabrications: Finish all surfaces exposed to view.
 - 1. Exterior: ME-OP-3A, gloss; finish all surfaces, including concealed surfaces, before installation.
 - 2. Interior: MI-OP-3L, gloss.
- E. Galvanized Steel: Finish all surfaces exposed to view, as indicated.
- F. Shop-Primed Metal Items: Finish all surfaces exposed to view, as indicated.
 - 1. Finish the following items:
 - a. Mechanical equipment.
 - b. Electrical equipment.

END OF SECTION