

SECTION 099123 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following exterior and interior substrates:
 - 1. Concrete masonry units (CMU).
 - 2. Steel
 - 3. Galvanized metal
 - 4. Mechanical and electrical work (MEP)
- B. Related Sections include the following:
 - 1. Division 3 Sections "Concrete" for sealers of concrete flatwork.
 - 2. Division 5 Sections for shop priming of metal substrates with primers specified in this Section.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: Upon request, for each type of topcoat product indicated.
- C. Samples for Verification: For each type of paint system and each color and gloss of topcoat indicated.
 - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - 2. Step coats on Samples to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
 - 5. Label each sample as to date painted.
- D. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.4 QUALITY ASSURANCE

A. MPI Standards:

1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

B. Mockups: Apply benchmark samples of each paint 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.

1.5 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 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.6 PROJECT CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents. Furnish an additional 1 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:

1. Sherwin-Williams Company
2. Benjamin Moore & Co.

3. Duron, Inc.
4. Finnaren & Haley Inc (F&H)
5. M.A.B. Paints.
6. Porter Paints.
7. PPG Pittsburg Paints

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are 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 paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Colors: To be selected by Architect from manufacturer's full range.

2.3 BLOCK FILLERS

A. Solvent Based Two-Part Epoxy Block Filler: MPI #116.

2.4 METAL PRIMERS

A. Zinc Rich Epoxy Primer, MPI #20.

2.5 WOOD PRIMERS

A. Exterior Latex-Based Wood Primer: MPI #6

B. Interior Latex-Based Wood Primer: MPI #39.

2.6 EPOXY PAINT

A. *Solvent-Based Epoxy (Interior): MPI #77. A solvent based, two component epoxy type, Gloss finish coating. Subject to compliance with requirements, provide one of the following:*

1. *Berger Paints; Apcoflor TC 530*
2. *Cloverdale Paint; ClovaCoat 300 Epoxy*
3. *Sherwin-Williams Company (The); Pro Industrial High-Performance Epoxy*

B. Solvent-Based High Build Epoxy(Interior & Exterior): MPI #98. A high-build solvent based, two component epoxy type, Gloss finish coating. Subject to compliance with requirements, provide one of the following:

- 1. Benjamin Moore & Co.; Polymide Epoxy Coating.*
- 2. Cloverdale Paint; ClovaCoat 300 Epoxy*
- 3. Sherwin-Williams Company (The); Pro Industrial High-Performance Epoxy*

2.7 POLYURETHANE

A. Solvent-Based Polyurethane (Exterior): MPI #72. A solvent based, two component polyurethane pigmented type, Gloss finish coating. Subject to compliance with requirements, provide one of the following:

- 1. Benjamin Moore & Co.; Aliphatic Urethane.*
- 2. Cloverdale Paint; Armourshield*
- 3. Sherwin-Williams Company (The); Acrolon 218 HS*

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.**
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:**
 - 1. Concrete: 12 percent.**
 - 2. Masonry: 12 percent.**
 - 3. Wood: 15 percent.**
 - 4. Gypsum Board: 12 percent.**
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.**
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.**
 - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.**

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
 - 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
 - 2. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
 - 3. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
 - 4. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting
- D. Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
- F. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
 - 1. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3.
 - 2. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 - 3. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints 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.

E. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

F. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

G. Overhead Structure and Exposed Ceiling Steel and Galvanized-Metal Substrates:

1. Prep substrate as required minimum. Repair existing primed surfaces.
2. Galvanized surface shall be prepared by either solvent cleaning and test for chromate passivation, with an SSPC SP 7 Brush-off blast cleaning if required or chemical-etching cleaners may be substituted for solvent washing and SSPC-SP 7 cleaning.
3. Apply organic zinc rich primer coat to unprimed surfaces.
4. Paint exposed metal deck, structural steel, conduit, un-insulated ductwork and piping, and other mechanical and electrical work. Protect surfaces not to be painted.

H. Exterior Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed on exterior of building, excluding roof mounted mechanical and electrical work. Items to be painted include, but are not limited to, the following:

1. Uninsulated metal and plastic piping, including hangers and supports.
2. Louvers, grilles, vents unless prefinished.
3. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
4. Conduit and junction boxes.
5. Electrical equipment that is indicated to have a factory-primed finish for field painting.
6. Do not paint unless noted otherwise.
 - a. Prefinished mechanical equipment and items
 - b. pipe and duct insulation
 - c. Prefinished electrical devices and/or cover plates
 - d. Electrical fixtures
 - e. Nameplates
 - f. Moving parts
7. Touch up damaged finishes, including field applied and pre-finished surfaces.

I. Interior Mechanical and Electrical Work: Unless otherwise noted, painting of mechanical and electrical work is limited to items exposed to view in finished spaces as defined herein.

1. Locations where MEP work to be field painted include following:
 - a. Occupied or Finished Spaces without ceilings - Paint all exposed MEP work as described herein exposed to view, including the structure above - unless noted otherwise.
2. Items to be painted include, but are not limited to, the following:
 - a. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - b. Uninsulated metal and plastic piping
 - c. Piping hangers and supports.

- d. Louvers grilles vents unless prefinished
 - e. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
 - f. Electrical equipment that is indicated to have a factory-primed finish for field painting.
 - g. Conduit and junction boxes, including metallic and PVC materials, fire alarm, BAS, attachments exposed and semi-exposed to view in finish areas
 - h. Electrical and control panels in finish areas and exposed to view
3. Do not paint, unless noted otherwise.
- a. Prefinished mechanical equipment and items
 - b. pipe and duct insulation
 - c. Prefinished electrical devices and/or cover plates
 - d. Electrical fixtures
 - e. Nameplates
 - f. Moving parts
 - g. Sight exposed interior of ductwork and other equipment
4. Touch up damaged finishes, including field applied and pre-finished surfaces.

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. 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.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE

- A. Exterior steel shall be Hot-Dipped Galvanized unless noted otherwise, see sections 051200 "Structural Steel Framing" and 055100 "Metal Stairs" for galvanized finish requirements.
- B. Painted Exterior Steel Substrates:

1. *Solvent-Based Epoxy Coating System (MPI Gloss Level 6):*

- a. Prime Coat: Organic Zinc Rich Epoxy Primer, MPI #20
- b. *Intermediate Coat: Solvent Based High-performance Epoxy, MPI #98.*
- c. *Topcoat: Solvent Based UV Stabilized Polyurethane Top Coat MPI #72*

C. Wood Substrates:

1. Latex System MPI EXT 6.4K:

- a. Prime Coat: Primer, bonding, water based, MPI #6.
- b. Intermediate Coat: Latex, exterior, matching topcoat.
- c. Topcoat: Latex, exterior, semi-gloss (MPI Gloss Level 5), MPI #11.

D. CMU Substrates:

1. See Section 042200 Concrete Unit Masonry for exterior CMU Sealing

3.6 INTERIOR PAINTING SCHEDULE

A. CMU Substrates:

1. *Solvent-Based Epoxy Coating System (MPI Gloss Level 6):*

- a. Block Filler First Coat: *Epoxy* block filler, MPI #116.
- b. Block Filler Second Coat: *Epoxy* block filler, MPI #116.
- c. Intermediate Coat: Same as Topcoat.
- d. Topcoat: Solvent Based High-performance Epoxy, MPI #77

B. Interior Steel Substrates:

1. *Solvent-Based Epoxy Coating System (MPI Gloss Level 6):*

- a. Prime Coat: Organic Zinc Rich Epoxy Primer, MPI #20
- b. Intermediate Coat: Same as topcoat.
- c. Topcoat: Solvent Based High-performance Epoxy, MPI #98

C. Interior Galvanized-Metal Substrates:

1. *Solvent-Based Epoxy Coating System (MPI Gloss Level 6):*

- a. Prime Coat: Organic Zinc Rich Epoxy Primer, MPI #20
- b. Intermediate Coat: Same as topcoat.
- c. Topcoat: Solvent Based High-performance Epoxy, MPI #98

D. Wood Substrates: Wood trim

1. Latex over Latex Primer System MPI INT 6.3T:

- a. Prime Coat: Primer, latex, for interior wood, MPI #39.
- b. Intermediate Coat: Latex, interior, matching topcoat.
- c. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.

END OF SECTION 099123