SECTION 09 91 00 – PAINTING AND FINISHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on substrates.

B. Related Requirements:

1. Requirements for preparing, priming, painting, and finishing are included throughout the specifications. All specification sections shall be reviewed for painting and finishing requirements.
2. Division 05 Section "Structural Steel Framing" for shop priming of metal substrates with primers specified in this Section.
3. Division 09 Section "Epoxy Flooring" for epoxy flooring systems.

1.3 DEFINITIONS

A. Gloss Level 1 (Matte Flat Finish): Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 2 (Velvet-Like Flat Finish): Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. Gloss Level 3 (Eggshell Finish): 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. Gloss Level 4 (Satin Finish): 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 (Semi-Gloss Finish): 35 to 70 units at 60 degrees, according to ASTM D 523.

F. Gloss Level 6 (Gloss Finish): 70 to 85 units at 60 degrees, according to ASTM D 523.

G. Gloss Level 7 (High-Gloss Finish): More than 85 units at 60 degrees, according to ASTM D 523.

1.4 UNIT PRICES

A. Specific work of this section is itemized as Unit Prices on the Bid Form to add or deduct specific units of work to the project. Unit Price descriptions, requirements and units of work are enumerated in Division 01 Section "Unit Prices." Unit Prices are inclusive of all labor, materials, overhead, and profit per unit of work indicated.

1.5 ALLOWANCES

A. Work Included in Base Bid: The Contractor shall include in the space provided on the Bid Form, the allowances for work of this section itemized on the Bid Form. The cost of these quantities shall be computed using the Unit Prices stated on the Bid Form. The work listed is in addition to that required to complete the work of the Contract and, consequently, the sum therefore may be deducted from the Contract amount if the corresponding work is not required by actual conditions encountered.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: For each type of topcoat product.

1. Submit manufacturer's standard "fan deck" of colors.
2. Architect will request Samples for Verification after receipt of manufacturer's "fan deck."

C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches 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. Architect will furnish color schedule approximately 10 weeks after receipt of samples and other color-dependent submittals of other specification sections.

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. VOC content.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 10 percent, but not less than 5 gal. of each material and color applied.

1.8 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1. Review specification requirements.
2. Review installation procedures, including review of proper preparation of existing wall surfaces as indicated in the MPI Maintenance & Repainting Manual.
3. Inspect project conditions, including existing wall surfaces which require cleaning and spackling as part of the work.

1.9 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.

B. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

C. Mockups: Apply mockups 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. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft.
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.

1.10 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.

1. Maintain containers in clean condition, free of foreign materials and residue with manufacturer's data.
2. Remove rags and waste from storage areas daily.
3. Protect product from freezing.

1.11 FIELD CONDITIONS

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

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

C. Where moisture is present, the general contractor shall provide the necessary ventilation to establish appropriate condition. Should the surface be too dry for the product application, the painting contractor shall provide the necessary methods to establish the appropriate conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. The Sherwin Williams Company (SW).
2. PPG PAINTS Architectural Coatings (PPG).

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. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

C. Colors: As selected by Architect from manufacturer's full range.

1. Exterior Work: A maximum of 4 different colors will be used, with variations for trim, doors, miscellaneous work, and metal work.
2. Interior Work: A maximum of 10 different pigmented colors will be used, with variations for trim, wall surfaces, wainscots, and graphics.
3. Dark Tones: A maximum of 6 dark tones will be used as accent colors for the interior.

D. Multiple Colors: Each room or space may have walls of more than one color. The right is reserved to vary the color after the first coat.

E. Color Guarantee: Painting Contractor shall guarantee all in-place paint and stain colors to match colors selected. Obtain copies of standard color charts used, and be certain all in-place paint and stain colors closely match selected colors. Surfaces which fail to pass color inspection shall be repainted at no additional cost to Owner.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint 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 materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

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 the Work.

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. Wood: 15 percent.
4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

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.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. General: All areas listed in the Room Finish Schedule as receiving paint (i.e. walls, ceilings, etc.) shall be inclusive of all non-factory finished surfaces. All costs of preparation, cleaning, protection, priming, finishing, cleaning, etc. shall be included for all surfaces (wall, trim, moldings, frames, etc.) and materials (metal, wood, CMU, plaster, gypsum board, etc.) unless specifically noted otherwise. All work shall be in accordance with these Specifications and instructions in the Contract Documents.

B. Comply with manufacturer's written instructions and recommendations in "MPI Manual" and "Maintenance & Repainting Manual" as applicable to substrates indicated.

C. Remove hardware, covers, plates, and similar items already in place that are removable and 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.

D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
2. Clean existing surfaces of residue and miscellaneous applied finishes to provide a properly prepared surface to receive new finish.
3. Spackle holes, depressions and imperfections on existing gypsum board, concrete and plaster surfaces as recommended by manufacturer to provide a uniform surface to receive new finish.

E. Concrete Substrates: Remove release agents, curing compounds, 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.

F. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.

G. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer**.**

H. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

I. 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.

J. Aluminum Substrates: Remove loose surface oxidation.

K. Wood Substrates for Painting:

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.

L. Wood Substrates for Staining and Finishing:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Apply wood filler paste to open-grain woods, as defined in "MPI Architectural Painting Specification Manual," to produce smooth, glasslike finish.
3. Sand surfaces that will be exposed to view and dust off.
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 and according to recommendations in "MPI Manual."

1. Materials shall be applied with roller or brush, except that spraying will be permitted for items such as mechanical equipment, grilles, or similar items. Mask off adjoining areas not receiving a spray finish against overspray.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on existing surfaces painted previously or on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

a. Spot prime where required or provide alternative preparation product as recommended by manufacturer.

B. Apply stains and finishes according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

1. Use applicators and techniques suited for finish and substrate indicated.
2. Finish surfaces behind movable equipment and furniture same as similar exposed surfaces.
3. Do not apply finishes over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

C. If, in the opinion of the Architect, adequate block filler, primer, paint or coating coverage is not provided, Contractor shall apply additional coats to satisfy Architect, at no additional cost to the Owner.

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

E. Apply paints, stains and finishes 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.

F. Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of materials is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint same as adjacent similar materials or areas. If color or finish is not designated, Architect will select these from standard colors available for materials systems specified.

G. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint all new and existing mechanical and electrical work where exposed in occupied spaces including, but not limited to:

a. Equipment not prefinished.
b. Uninsulated metal piping, except chrome finished.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Electrical conduit, boxes, raceways and trays.
f. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
g. Other items as directed by Architect.

2. Mechanical and electrical items to be painted shall be finished the color(s) of the adjacent surface unless noted otherwise. Any questions regarding the color(s) to be provided shall be submitted to the Architect for clarification.
3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

a. Color: SW 6991 "Black Magic".

H. Painting Frames: Hollow metal shall be painted different colors on each side of the door (split frames) unless indicated otherwise.

I. Painting Glazed Tile and Masonry Surfaces:

1. Contractor shall mechanically abrade all glazed tile and glazed CMU surfaces to receive painted finish and shall thoroughly clean to remove all dirt, dust, wax, cleaners, and any other contaminants from the tile/CMU and grout/mortar. Allow to dry prior to applying paint system.
2. Prior to application, Contractor and painter shall apply a test sample of the primer (min. area 2' x 2') over properly prepared surface. Contractor, along with paint representative, shall perform an adhesion test to ensure adhesion prior to complete application.
3. Report in writing to the Architect the results of the test before completing the job and provide written confirmation from paint system manufacturer that results are satisfactory. Do not proceed with application of paint until written certification has been accepted by the Architect.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services 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.

3.5 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.

3.6 PAINTING AND FINISHING SCHEDULE

A. Concrete and Masonry Substrates

1. Interior, Latex, Non-Traffic Surfaces: Gloss Level 3

a.	SW	Filler (masonry):	PrepRite Block Filler (B25W25)
		Primer (concrete):	Loxon Masonry Primer
		1st coat:	ProMar 200 Zero VOC
		2nd coat:	ProMar 200 Zero VOC
b.	PPG	Filler (masonry):	SPEEDHIDE Hi Fill Latex Block Filler 6-15X1 Series
		Primer (concrete):	SEAL GRIP Acrylic Universal Primer 17-921 Series
		1st coat:	SPEEDHIDE Zero 6-5310 Series
		2nd coat:	SPEEDHIDE Zero 6-5310 Series

B. Metal Substrates:

1. Interior, Ferrous Metals, Latex: Gloss Level 5

a.	SW	Primer*:	DTM Primer / Finish
		1st coat:	DTM Acrylic Finish
		2nd coat:	DTM Acrylic Finish
b.	PPG	Primer*:	Pitt Tech Plus DTM Industrial Primer 4020
		1st coat:	Pitt Tech Plus EP DTM Acrylic Semi-Gloss 90-1610 Series
		2nd coat:	Pitt Tech Plus EP DTM Acrylic Semi-Gloss 90-1610 Series

*Spot prime where metals are shop coated or primed

2. Interior, Ferrous Metals, Dryfall, Latex: Gloss Level 1

a.	SW	Primer*:	Pro-Cryl Universal Primer
		1st coat:	Waterborne Acrylic Dryfall
		2nd coat:	Waterborne Acrylic Dryfall
b.	PPG	Primer*:	Pitt Tech Plus DTM Industrial Primer 4020
		1st coat:	SPEEDHIDE® SUPER TECH® Interior Dry-Fog Flat Latex G-725XI
		2nd coat:	SPEEDHIDE® SUPER TECH® Interior Dry-Fog Flat Latex G-725XI

*Spot prime where metals are shop coated or primed

3. Exterior, Ferrous Metals, Latex Paint Over Alkyd Primer System: Gloss Level 5

a.	SW	Primer:	Kem Bond Alkyd Primer
		1st coat:	ProIndustrial DTM Acrylic Finish
		2nd coat:	ProIndustrial DTM Acrylic Finish
b.	PPG	Primer:	Multi-Purpose Tank and Structural Primer 4160
		1st coat:	Pitt Tech Plus EP DTM Acrylic Semi-Gloss 90-1610 Series
		2nd coat:	Pitt Tech Plus EP DTM Acrylic Semi-Gloss 90-1610 Series

4. Non-Ferrous Metals, (Galvanized), Latex: Gloss Level 5

a.	SW	Primer:	DTM Primer / Finish
		1st coat:	ProIndustrial DTM Acrylic Finish
		2nd coat:	ProIndustrial DTM Acrylic Finish
b.	PPG	Primer:	Multi-Purpose Tank and Structural Primer 4160
		1st coat:	Pitt Tech Plus EP DTM Acrylic Semi-Gloss 90-1610 Series
		2nd coat:	Pitt Tech Plus EP DTM Acrylic Semi-Gloss 90-1610 Series

C. Wood Substrates:

1. Interior, Latex Paint System: Gloss Level 5

a.	SW	Primer:	ProMar 200 Zero VOC Primer
		1st coat:	ProMar 200 Zero VOC
		2nd coat:	ProMar 200 Zero VOC
b.	PPG	Primer:	SEAL GRIP Universal Primer 17-921 Series
		1st coat:	SPEEDHIDE Zero 6-5510
		2nd coat:	SPEEDHIDE Zero 6-5510

2. Interior, Polyurethane Coating System (Natural): Gloss Level 4

a.	SW	Wood Filler:	Wood Filler
		1st coat:	MinWax Fast Drying Polyurethane (gloss, semi-gloss or satin)
		2nd coat:	MinWax Fast Drying Polyurethane (gloss, semi-gloss or satin)
b.	PPG	Wood Filler:	Varathane Wood Filler
		1st coat:	Varathane Interior Oil-Based Polyurethane
		2nd coat:	Varathane Interior Oil-Based Polyurethane

3. Interior, Polyurethane Stain Coating System: Gloss Level 4

a.	SW	Wood Filler:	Wood Filler
		1st coat:	MinWax Performance Series Wood Stain 250 VOC
		2nd coat:	MinWax Fast Drying Polyurethane (gloss, semi-gloss or satin)
		3rd coat:	MinWax Fast Drying Polyurethane (gloss, semi-gloss or satin)
b.	PPG	Wood Filler:	Varathane Wood Filler
		1st coat:	Varathane Premium Fast Dry Wood Stain
		2nd coat:	Varathane Interior Oil-Based Polyurethane
		3rd coat:	Varathane Interior Oil-Based Polyurethane

D. Fiberglass and Plastic Substrates:

1. Interior, Latex Paint System: Gloss Level **3**

a.	SW	Primer:	Extreme Bond B51W00150
		1st coat:	ProMar 200 Zero VOC
		2nd coat:	ProMar 200 Zero VOC
b.	PPG	Primer:	SEAL GRIP Universal Primer 17-921 Series
		1st coat:	SPEEDHIDE Zero 6-5310 Series
		2nd coat:	SPEEDHIDE Zero 6-5310 Series

E. Gypsum Board and Plaster Substrates:

1. Interior, Latex Paint System: Gloss Level **3**

a.	SW	Primer:	ProMar 200 Zero VOC Primer
		1st coat:	ProMar 200 Zero VOC
		2nd coat:	ProMar 200 Zero VOC
b.	PPG	Primer:	SPEEDHIDE Zero Primer 6-4900XI
		1st coat:	SPEEDHIDE Zero 6-5310 Series
		2nd coat:	SPEEDHIDE Zero 6-5310 Series

F. Glazed Wall Tile and Glazed Masonry Units:

1. Interior, Latex Paint System: Gloss Level 3 or match existing.

a.	SW	Primer:	Extreme Bond Primer
		1st coat:	ProIndustrial Water-Based Alkyd Urethane Enamel, B53 Series
		2nd coat:	ProIndustrial Water-Based Alkyd Urethane Enamel, B53 Series
b.	SW	Primer:	Equal product from PPG
		1st coat:	Equal product from PPG
		2nd coat:	Equal product from PPG

END OF SECTION 09 91 00