SECTION 09 90 00
PAINTING AND COATING

PART 1 - GENERAL

1.1 SUMMARY

A. Provide painting and coating work as shown and specified. Work includes:
   1. Coating system materials, including sealers, primers, emulsions, enamels, special coatings and other applied materials used as prime, intermediate and finish coats and the application of these materials.
   2. Surface preparation, prime, intermediate and finish coatings for interior and exterior new and existing surfaces and items.
   3. Touch-up and finish painting of shop primed metal doors, door frames and overhead coiling doors.

B. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.

C. Do not paint factory and shop finished items, concealed surfaces, finished metal surfaces, door hardware, operating parts, and labels.

D. Related Sections:
   1. Section 07 60 00 Flashing and Sheet Metal: Pre-painted flashing and sheet metal materials.
   2. Section 08 11 0 Metal Doors and Frames: Shop primed metal door and frame materials.
   3. Section 08 33 23 Overhead Coiling Doors: Shop primed overhead coiling door materials.
   4. Section 08 51 13 Aluminum Windows and Storefront Framing: Factory finished aluminum windows and storefront framing.

1.2 REFERENCES

A. Reference standards:
   1. American National Standards Institute (ANSI):
      a. ANSI Z66.1 "Specifications for Paints and Coatings Accessible to Children, to Minimize Dry Film Toxicity."
   2. ASTM:
      a. ASTM D16 "Terminology Relating to Paint, Varnish, Lacquer and Related Products."
      b. ASTM D2833 "Index of Methods for Testing Architectural Paints and Coatings."
      c. ASTM D3276 "Guide for Paint Inspectors (Metal Substrates)."
   3. Steel Structures Painting Council (SSPC):
      a. SSPC Volume 1 "Good Painting Practice."
      b. SSPC Volume 2 "Systems and Specifications."

1.3 SUBMITTALS

A. Submit a complete schedule identifying manufacturer and specific brand name or number of products proposed for finishing specified surfaces.

B. When requested, submit the following:
   1. Paint label analysis for each paint material required. Indicate:
      a. Pigment materials and percent of each by weight.
      b. Vehicle materials and percent of each by weight.
      c. Percentages of ingredients shall add up to 100 percent.
   2. Application instructions for each paint material required.

C. When requested, provide the following material testing comparing proposed and specified paint materials. Submit certified test results for review of proposed substitute and specified paint materials performance characteristics.
   1. Draw down samples on hiding power charts.
   2. Draw down samples on porosity charts.
   3. Leneta graduated film thickness sag test.
   4. ASTM Scrub Test.
   5. Stain resistance test.

D. When requested, submit a complete range of paint color samples for color selection.

E. Before beginning work, prepare duplicate samples on actual materials for Architect/Engineer's review of color and texture. Provide complete finish on one-half of surface, successive applications required to produce finish on other half. Label and identify sample locations and applications. Use representative colors when preparing samples for review. Resubmit until required sheen, color and texture are accepted. Include the following:
   1. Ferrous and galvanized metal: Provide two 4" x 4" samples of flat metal for each color and finish.
   2. Mineral fiber cement siding and trim: Provide two 12" x full width samples for each color and finish.
   3. Items as directed by Architect/Engineer.

F. Submit manufacturer's and installer's certification that paint materials supplied for project use comply with specification requirements.

1.4 QUALITY ASSURANCE

A. Single source responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

B. Application: Performed only by skilled, experienced painters.

C. Provide lead free prime and finish coatings. All top coatings shall be mold and mildew resistant.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's original, unopened labeled containers.

B. Store materials in a single, suitable location approved by the Owner's representative. Store, protect and handle materials in accordance with manufacturer's recommendations to prevent damage and deterioration. Store paint materials at minimum temperature of 50 degrees F.

C. Maintain paint material storage space clean, non-hazardous and orderly. Place waste and soiled paint rags in tightly covered metal containers; safely dispose of at end of each working day. Take every precaution to avoid fire hazards and spontaneous combustion. Provide acceptable type of fire extinguisher immediately adjacent to paint storage area.

1.6 PROJECT CONDITIONS

A. Painting:
   1. During painting work, the existing building will be continuously occupied. Conduct painting work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to the Owner's representative of painting activities within the building.
   2. Coordinate access into occupied building areas with the Owner's representative.

B. Protection:
   1. Perform painting work to prevent injury or damage to the remaining building contents, structure and elements.
   2. Provide all necessary protection for Owner's personnel, building occupants, and worker safety and protection of property.

C. A complete schedule of finishes and colors will be provided by the Architect/Engineer before beginning painting work.

D. Comply with material manufacturer's recommended temperature and environmental limitations for painting and finishing applications.
   1. Apply paint and finish materials only when temperature of surfaces to be finished and surrounding air temperatures are between 50 degrees F and 90 degrees F, except as otherwise permitted by manufacturer's printed directions.
   2. Do not apply exterior materials in snow, rain, or fog, or to frozen, damp, or wet surfaces. Allow wet surfaces to dry and attain indicated temperatures and conditions before proceeding with the work.
   3. Avoid finishing surfaces directly exposed to hot sun.
   4. Provide adequate illumination on surfaces to be finished. Maintain a minimum 15 foot candle lighting level.
   5. Provide adequate ventilation as required for specified paint and finish treatment materials at interior spaces. Maintain for time periods recommended by material manufacturer to provide proper drying.
   6. Protect adjoining surfaces against damage or soiling.

E. Provide necessary protection during inclement weather to permit proper application and drying of paint coatings and finishing treatments.

1.7 MAINTENANCE

A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.
   1. Provide one gallon of paint of each type and color required for maintenance purposes. Provide original, unopened, labeled containers with color samples and a list of project use. Maximum of three different colors required.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Paint: The Sherwin-Williams Co. (SW), or equal products by Benjamin Moore & Co. (Moore); AkzoNobel Inc. or PPG Architectural Finishes, Inc. (PPG)

2.2 MATERIALS

A. Material Compatibility: Provide undercoats and finish-coat 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.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
   1. The acceptance of equal products shall be based on quantitative analysis criteria described in the project submittal requirements and certified by the proposed paint manufacturer.
   2. Color pigments: Pure, non-fading, applicable types to suit substrates and service indicated. Provide pigments fully ground, maintaining a soft paste consistency in the vehicle during storage, readily and uniformly dispersed by paddle to a complete homogeneous mixture ready for use.
   3. Provide base and intermediate coat products compatible with finish coat and as produced by manufacturer of finish coat.
   4. Provide ready-mixed paint. Job mixing and tinting not acceptable, except as directed by Architect.
   5. Paint materials shall have good flowing and brushing properties, dry or cure free of streaks or sags and yield desired finish specified.

C. Colors: Provide colors selected by the Architect from the manufacturer's full range of standard colors.

D. Paint accessory materials: Provide accessory materials required for the work. Use only materials of best quality, approved by paint manufacturer and used within paint manufacturer's recommended limits.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrate surfaces and installation conditions. Do not proceed with painting work until unsatisfactory conditions have been corrected.

B. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

C. Surfaces left unfinished shall be painted or finished as part of the work of this Section unless specifically noted otherwise.

D. Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
   1. Notify the Architect/Engineer about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. Remove or protect during painting, door hardware, accessories, mechanical grilles and louvers, electrical plates, fixtures and similar items installed before painting and not required to be painted. Store, clean and replace on completion of painting work in each area.

B. Provide shields, protective coverings and drop cloths. Protect floors and adjacent work and materials. Remove and properly replace temporary protection and coverings removed from any part of the work or finish. Repair damage at Contractor's expense.

C. Clean and prepare substrate surfaces in accordance with manufacturer's instructions for each particular substrate condition. Remove oil and grease before mechanical cleaning. Clean and correct defects and deficiencies in substrate surfaces to be painted before applying paint or finish treatments.

D. Do not paint over dirt, rust, scale, grease, oil, moisture, marred surfaces, mildew or other conditions detrimental to formation of a durable paint film.

E. Cementitious materials: Prepare surfaces of mineral fiber cement siding and trim by removing efflorescence, chalk, laitance, dust, dirt, grease and oil. Roughen surfaces as required to remove glaze.

F. Ferrous metals: Clean metal surfaces by solvent or mechanical cleaning. Remove oil, grease, dirt, loose mill scale and other foreign materials.
   1. Touch-up damaged, field welded and bare areas of shop applied prime coats. Touch-up with metal primer compatible with shop primer and finish coats.
   2. Remove shoulders at edge of sound paint to prevent photographing through finish coats.
   3. Remove dirt and grease on galvanized surfaces scheduled for paint finish with solvent or chemical washes. Wipe dry with clean cloths.

G. Existing surfaces scheduled for painting or finishing.
   1. Condition, clean, sand, prime, and prepare existing surfaces as required for application of finish materials. Except where condition or type of surface requires priming, provide finish coats only over existing surfaces. Provide finish materials for existing surfaces same as new surfaces and as scheduled under Paint Materials Schedule.
   2. Where existing finish material texture, sheen, or gloss varies from specified finish, obtain Architect/Engineer's acceptance of desired finish treatment before painting.
   3. Remove loose, blistered, scaled, or crazed finish to bare base material.
   4. Existing painted ferrous metal: Sand rough edges of bare areas to featheredge at adjacent sound paint. Remove rust and loose paint to bare metal, solvent wash. Apply prime paint.
   5. Existing painted concrete and masonry: Remove loose, flaking and blistered paint. Fill surface cracks with approved latex base filler. Apply primer-sealer over bare substrate and filled cracks.

3.3 APPLICATION

A. Mix, prepare and apply paint and finish treatment materials in accordance with manufacturer's directions.

B. Apply paint and finish treatment materials with brush or roller. Spray application of materials permitted only when specifically acceptable to Architect/Engineer.
   1. Rate of application shall not exceed manufacturer's surface involved. Apply each coat of proper consistency.
   2. Provide each coat of paint of slightly different color, except as otherwise acceptable to Architect/Engineer.
   3. Keep brushes and rollers clean, free from contamination and suitable for the finish required.
   4. Comply with manufacturer's recommendations for drying time between succeeding coats.
   5. Sand lightly between coats to achieve required finish.
   6. Finished surfaces shall be uniform in finish and color and free of brush marks, sagging, holidays, corduroy and other imperfections. If a coat is judged unsatisfactory, sand or otherwise clean off unsatisfactory coat and apply another coat. If undercoating is disturbed because of unsatisfactory coat removal, refinish surface completely.
   7. Coverage and hide shall be complete. Apply additional coatings when undercoats, stains, or other conditions show through final coat of paint, until paint film is of uniform finish, color, appearance and coverage.
   8. Finish film thickness: Apply materials at not less than the manufacturer's recommended spreading rate, to provide a total dry film thickness as scheduled. When not indicated, dry film thickness shall be as recommended by material manufacturer.

C. Tops, bottoms and edges of metal doors shall be painted with same materials and number of coats as used on door faces.

D. Edges of paint or finish adjoining other materials or colors shall be sharp and clean without overlapping.

E. Paint and finish new exterior metal doors, door frames and overhead coiling doors at interior and exterior, and existing exterior metal doors and sidelights and transom panels framing at interior and exterior.
   1. Provide proper surface preparation and touch-up painting for scheduled new and existing materials to receive paint coatings.
   2. Touch-up welds, fasteners and abrasions to the shop coating, in addition to finish painting, utilizing the appropriate primers for ferrous metals.
   3. Factory finished flashing, sheet metal, roof accessories, louvers and other factory finished metals to remain as finished.

F. Field touch-up painting: Provide proper surface preparation for new and existing materials to receive paint coatings.
   1. Provide field touch-up painting of metal doors and frames after erection.
   2. Touch-up welds, fasteners and abrasions to the shop coating, in addition to finish painting, utilizing zinc rich primers for galvanized materials and zinc chromate primers for ferrous metals.

3.4 WASTE MATERIALS

A. Haul from site on a daily basis and legally dispose of waste materials and debris.

B. Maintain on-site and public streets, access driveways and other facilities used for disposal routes clear, clean and free of debris.

3.5 CLEANING AND PROTECTION

A. On a daily basis, clean all areas of work within Contract limits. Leave no materials, tools, equipment or items loose or accessible to building occupants. Coordinate clean-up with Owner's representative to ensure a safe environment for building occupants. Refer to the Special Conditions for additional requirements.

B. During progress of the work and upon completion, promptly clean adjacent surfaces and materials of spills, spatters, drips and stains from painting application. Remove paint by proper methods exercising care to prevent damage to finished surfaces and materials.

C. Protect work of other trades against damage resulting from painting and finishing work. Correct damage by cleaning, repairing or replacing and repainting as acceptable to the Architect/Engineer.

D. Replace, clean and adjust finish hardware, accessories, mechanical grilles and louvers, electrical plates, fixtures and similar items removed for painting work.

E. Touch-up damaged painted surfaces before final project acceptance.

F. At completion of work, clean all areas of work within Contract limits and leave work areas clear, clean and free of rubbish and debris. Remove from site excess materials, debris, tools and equipment.

3.6 PAINT AND FINISH MATERIALS SCHEDULE

A. Apply paint and finish materials to substrate surfaces indicated. Apply touch-up prime coats in addition to shop-applied prime coats. Provide additional job site prime coats when indicated.

B. Ferrous metal, painted: Primer is not required on shop-primed items.
1. High gloss alkyd enamel: 2 finish coats over primer with total dry film thickness not less than 7.0 mils.
   a. .Primer: S-W Kem Kromik Universal Metal Primer B50Z Series.
   b. Finish coats: S-W Industrial Enamel B54Z Series.

C. Zinc-coated (Galvanized) metal, painted:
1. High gloss alkyd enamel: 2 finish coats over primer with total dry film thickness not less than 8.5 mils.
   a. Primer: S-W Galvite HS B50WZ30.
   b. Finish coats: S-W Industrial Enamel B54Z Series.

D. Mineral fiber cement siding and trim, painted: Primer is not required on shop-primed items.
1. Flat latex finish: 2 finish coats over primer with total dry film thickness not less than 5.4 mils
   a. Primer: S-W PrepRite Masonry Primer, B28W300
   b. Finish coats: S-W ProMar 200 Latex Flat Wall Paint, B30W200

END OF SECTION 09 90 00