

## SECTION 099000 - PAINTING AND COATING

### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Field painting of exposed interior items and surfaces.
  2. Field painting of exposed exterior items and surfaces.
  3. Surface preparation for painting.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 051200 - STRUCTURAL STEEL for shop priming structural steel.
  2. Section 055000 - METAL FABRICATIONS for shop priming ferrous metal.
  3. Section 081113 - HOLLOW METAL DOORS AND FRAMES for factory priming steel doors and frames.
  4. Section 081416 - FLUSH WOOD DOORS for factory finishing.
  5. Section 092116 - GYPSUM BOARD ASSEMBLIES for surface preparation of gypsum board.

#### 1.2 DEFINITIONS AND EXTENT

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
  2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
  3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
  4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.
- B. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- C. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent

materials or surfaces. If a color of finish is not indicated, Designer will select from standard colors and finishes available.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.
- D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
1. Prefinished items include the following factory-finished components:
    - a. Architectural woodwork.
    - b. Acoustical wall panels.
    - c. Toilet enclosures.
    - d. Metal lockers.
    - e. Kitchen appliances.
    - f. Dumbwaiter entrance doors and frames.
    - g. Dumbwaiter equipment.
    - h. Finished mechanical and electrical equipment.
    - i. Light fixtures.
  2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
    - a. Foundation spaces.
    - b. Furred areas.
    - c. Ceiling plenums.
    - d. Utility tunnels.
    - e. Pipe spaces.
    - f. Duct shafts.
    - g. Elevator shafts.
  3. Finished metal surfaces include the following:
    - a. Anodized aluminum.
    - b. Stainless steel.
    - c. Chromium plate.
    - d. Copper and copper alloys.
    - e. Bronze and brass.
  4. Operating parts include moving parts of operating equipment and the following:
    - a. Valve and damper operators.
    - b. Linkages.
    - c. Sensing devices.
    - d. Motor and fan shafts.

5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

### 1.3 SUBMITTALS

- A. Product Data: For each paint system indicated. Include block fillers and primers.
  1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
  2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
- B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
  1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
  2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
  3. Submit two eight inch by 12 inch Samples for each type of finish coating for Designer's review of color and texture only.
- C. Qualification Data: For Applicator.

### 1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
- C. Mockups: Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.
  1. Designer will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.
    - a. Wall Surfaces: Provide samples on at least 100 sq. ft.
    - b. Small Areas and Items: Designer will designate items or areas required.

2. Apply benchmark samples, according to requirements for the completed Work, after permanent lighting and other environmental services have been activated. Provide required sheen, color, and texture on each surface.
  - a. After finishes are accepted, Designer will use the room or surface to evaluate coating systems of a similar nature.
3. Final approval of colors will be from benchmark samples.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
  1. Product name or title of material.
  2. Product description (generic classification or binder type).
  3. Manufacturer's stock number and date of manufacture.
  4. Contents by volume, for pigment and vehicle constituents.
  5. Thinning instructions.
  6. Application instructions.
  7. Color name and number.
  8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
  1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

#### 1.6 PROJECT CONDITIONS

- A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.
- B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
- C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
  1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work are listed in the Finish Schedule at the end of this Section.
  - 1. Sherwin Williams is the hospital standard for common interior painting.

### 2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with 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 that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
  - 1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
  - 2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: 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 Designer about anticipated problems when using the materials specified over substrates primed by others.

### 3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If

removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
  2. Cementitious Materials: Prepare concrete, concrete unit masonry, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
    - a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
    - b. 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.
    - c. 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.
  3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
    - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
    - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
    - c. If transparent finish is required, backprime with spar varnish.
    - d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.

- e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
  4. 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.
    - a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3.
    - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
  5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
  2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
  3. Use only thinners approved by paint manufacturer and only within recommended limits.
- E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

### 3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
  2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
  3. Provide finish coats that are compatible with primers used.
  4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
  7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
  8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
  9. Sand lightly between each succeeding enamel or varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
  2. Omit primer over metal surfaces that have been shop primed and touchup painted.
  3. 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. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
  4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
- C. 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.
- D. 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.
- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- F. Mechanical items to be painted include, but are not limited to, the following:



1. Uninsulated metal piping.
  2. Uninsulated plastic piping.
  3. Pipe hangers and supports.
  4. Tanks that do not have factory-applied final finishes.
  5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
  6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
  7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
- G. Electrical items to be painted include, but are not limited to, the following:
1. Switchgear.
  2. Panelboards.
  3. Electrical equipment that is indicated to have a factory-primed finish for field painting.
- H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- I. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
1. Provide satin finish for final coats.
- L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.
- 3.4 FIELD QUALITY CONTROL
- A. The OWNER'S Project Manager reserves the right to invoke the following test procedure at any time and as often as the OWNER'S Project Manager deems necessary during the period when paint is being applied:
1. The OWNER'S Project Manager will engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to

Project will be taken, identified, sealed, and certified in the presence of Contractor.

2. Testing agency will perform appropriate tests for the following characteristics as required by the OWNER'S Project Manager.
3. The OWNER'S Project Manager may direct Contractor to stop painting if test results show material being used does not comply with specified requirements. Contractor shall remove noncomplying paint from Project site, pay for testing, and repaint surfaces previously coated with the noncomplying paint. If necessary, Contractor may be required to remove noncomplying paint from previously painted surfaces if, on repainting with specified paint, the two coatings are incompatible.

### 3.5 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
  1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

### 3.6 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Designer.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
  1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

### 3.7 PAINT SCHEDULE

- A. Schedule: Provide products and number of coats specified. Where multiple manufactures are listed for a specific applications select one manufacturer for use across the entire project. Where and individual manufacturer is listed for a specific application use only the manufacturer listed.
- B. Exterior Paint Schedule:
  1. Exterior Ferrous Metal, Urethane System:  
(Surface Preparation: SSPC-SP6)

|          |    |   |
|----------|----|---|
| One Coat | 1. | Tnemec 90-1K97 at 3 mils DFT; shop applied under other Sections; use for touch up |
|----------|----|---|

2. PPG PMC 68 at 3 mils DFT; shop applied under other Sections; use for touch up
  3. Dupont Urethane Ganicin Zinc Rich Primer 80%zinc load at 3.0 mils DFT
  4. International Interzinc 315 at 2.0 to 3.0 mils DFT
- And One Coat
1. Tnemec N69 Hi-Build Epoxoline II at 3.0 mils DFT
  2. PPG PMC Amerlock 400 Hi-Build Epoxy at 3.0 to 5.0 mils DFT.
  3. Dupont 25P High Solids Epoxy at 4.0 to 6.0 mils DFT
  4. International Intergard 475 HS at 4.0 to 8.0 mils DFT
- And One Coat
1. Tnemec 1075 Endura-Shield at 3.0 mils DFT
  2. PPG PMC Amerlock 450H Polyurethane Topcoat at 3.0 mils DFT
  3. Dupont High Solids Imron Urethane at 4.0 mils DFT
  4. International Interthane 990 HS at 2.0 to 3.0 mils DFT
2. Exterior Galvanized Metal (not shop-finished under Section 051200 - STRUCTURAL STEEL FRAMING or Section 055000 - METAL FABRICATIONS): (Surface Preparation: SSPC-SP7 Brush-off Blast)
    - One Coat
      1. Tnemec N69 Epoxoline at 3.0 mils DFT
      2. PPG PMC Amerlock 400 Hi-Build Epoxy at 4.0-5.0 mils DFT
      3. Dupont 25P High Solids at 4.0 mils DFT
      4. International Intergard 475 HS at 5.0 to 10.0 mils DFT
    - And One Coat
      1. Tnemec V73 Endura-Shield at 3.0 mils DFT
      2. PPG PMC Amercoat 450H Polyurethane at 3.0 mils DFT
      3. Dupont Imron 2.8 Urethane at 3.0 to 4.0 mils DFT
      4. International Interthane 990 HS at 3.0 to 4.0 mils DFT
- C. Interior Paint Schedule for Standard Performance Coatings:
1. Interior Gypsum Wallboard and Plaster for Latex Eggshell Finish:
    - One Coat
      1. Sherwin Williams Harmony Latex Wall Primer
    - And Two Coats
      1. Sherwin Williams Harmony Latex Eggshell
  2. Interior Gypsum Wallboard and Plaster Ceilings for Latex Flat Finish:
    - One Coat
      1. Sherwin Williams Harmony Latex Wall Primer
    - And Two Coats
      1. Sherwin Williams Harmony Latex Flat
  3. Interior Gypsum Wallboard and Plaster for Latex Semi-Gloss Finish:
    - One Coat
      1. Sherwin Williams Harmony Latex Wall Primer
    - And Two Coats
      1. Sherwin Williams Harmony Latex Semi-Gloss

4. Interior Gypsum Wallboard and Plaster for Latex Gloss Finish: (Requires Level 5 Finish on Gypsum Wallboard Substrate)
  - One Coat 1. Sherwin Williams Harmony Latex Wall Primer
  - And Two Coats 1. Sherwin Williams Harmony Latex Gloss
  
5. Interior Architectural Woodwork, Finish Carpentry, and Wood Doors for Latex Semi-Gloss Paint Finish (softwoods, paint grade hardwoods, MDO, and hardwood veneers):
  - One Coat 1. Sherwin Williams Harmony Latex Primer
  - And Two Coats 1. Sherwin Williams Health Spec Latex Semi-Gloss
  
6. Interior Architectural Woodwork, Finish Carpentry and Millwork for Satin Transparent Finish (all hardwoods and hardwood veneers, except paint grade and factory-finished items):
  - Sand 120 grit sandpaper
  - Sand 220 grit sandpaper
  - One Coat Stain 1. Sherwin Williams Minwax Water Based Stain
  - And Two Coats 1. Sherwin Williams Minwax Water Based Polyurethane
  - Sand Between Urethane Coats 220 grit sandpaper
  
7. Interior Metals, Epoxy (Not specified to receive other coating systems/not shop finished):
  - One Coat 1. Approved primer, in shop under other Sections (where specified). If not shop primed, provide primer recommended by finish coating manufacturer
  - And One Coat 1. Tnemec N69 Epoxoline at 2.0 mils DFT  
2. PPG PMC Amerlock 400 at 2.0 to 4.0 mils DFT  
3. Dupont 25P at 3.0 to 4.0 mils DFT  
4. International Interseal 670 HS at 3.0 mils DFT
  - And One Coat 1. Tnemec 29 Tufcryn at 2.0 to 3.0 mils DFT  
2. PPG PMC Amerlock 400 at 2.0 to 4.0 mils DFT  
3. Dupont High Solids Acrylic Coating 3.0 mils DFT  
4. International Intercryn 530 at 3.0 to 4.0 mils DFT
  
8. Interior Exposed Steel, Joists, Ductwork, Conduit and Similar Items (where indicated):

- One Coat
1. Tnemec 115 WB Unibond or 15 Unibond at 2.5 to 3.0 mils DFT
  2. PPG PMC Amercoat 220 Acrylic at 3.0 mils DFT
  3. International Intercryl 530 at 2.5 to 3.0 mils DFT

9. Exposed Concrete Floor Sealer:

- One Coat
1. Ashford Formula by Curecrete Chemical
  2. Chem Probe CT Denisifyer
  3. Degussa R41 Sealer
  4. PPG PMC NU-Klad 126 or Amerlock Sear at 1.0 to 1.5 mils DFT

10. Mechanical and Electrical Work (Paint all exposed items throughout the project except factory finished items with factory-applied baked enamel finishes which occur in mechanical rooms or areas, and excepting chrome or nickel plating, stainless steel, and aluminum other than mill finished. Paint all exposed ductwork and inner portion of all ductwork: Same as specified for other interior metals, hereinabove.

D. ATTIC STOCK

- A. Provide to the owner at the completion of the project one gallon of each color paint for repairs in the future.

END OF SECTION