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**SECTION 09 90 00****PAINTING****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes surface preparation and the application of paint systems on exterior and interior substrates:

**1.2 DEFINITIONS**

- A. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

**1.3 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.
- 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.
- 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.
  - 3. VOC content.

**1.4 QUALITY ASSURANCE**

- A. 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.
  - 3. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
  - 4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 5. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

**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.

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

#### **1.6 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 when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

### **PART 2 PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products of The Sherwin-Williams Company or comparable product by one of the following:
  1. Benjamin Moore & Co.
  2. Coronado Paint.
  3. Duron, Inc.
  4. ICI Paints.
  5. MAB Paints.
  6. PPG Architectural Finishes, Inc.

#### **2.2 PAINT**

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. 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.
- C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  1. Non-flat Paints and Coatings: 150 g/L.
  2. Primers, Sealers, and Undercoaters: 200 g/L.
- D. Colors: As selected by Professional from manufacturer's full range.

### **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 (CMU): 12 percent.
  3. Gypsum Board: 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.
- F. Application of coating indicates acceptance of surfaces and conditions.

### **3.2 PREPARATION; GENERAL**

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. 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.
- C. 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.
- E. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- 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 but not less than SSPC-SP 2, "Hand Tool Cleaning."
- 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.

### **3.3 PREPARATION OF SURFACES WITH EXISTING COATINGS**

- A. Sand existing glossy surfaces to be painted to reduce gloss. Brush, and wipe clean with a damp cloth to remove dust.
- B. Clean previously painted surfaces specified to be repainted thoroughly of all grease, dirt, dust or other foreign matter.
- C. Remove blistering, cracking, flaking and peeling or other deteriorated coatings.
- D. Remove chalk so that when tested in accordance with ASTM D 4214, the chalk resistance rating is no less than 8.
- E. Roughen slick surfaces. Repair damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls with suitable material to match adjacent undamaged areas.
- F. Feather edge and sand smooth edges of chipped paint.
- G. Clean rusty metal surfaces in accordance with SSPC requirements. Use solvent, mechanical, or chemical cleaning methods to provide surfaces suitable for painting.

### **3.4 EXISTING COATED SURFACES WITH MINOR DEFECTS**

- A. Sand, spackle, and treat minor defects to render them smooth. Minor defects are defined as scratches, nicks, cracks, gouges, spalls, alligating, chalking, and irregularities due to partial peeling of previous coatings.
- B. Remove chalking by sanding [or blasting] so that when tested in accordance with ASTM D 4214, the chalk rating is not less than 8.

### **3.5 REMOVAL OF EXISTING COATINGS**

- A. Remove existing coatings from the following surfaces:
  - 1. Surfaces containing large areas of minor defects.
  - 2. Surfaces containing more than 20 percent peeling area.
  - 3. Surfaces designated by the Architect, such as surfaces where rust shows through existing coatings.

### **3.6 SUBSTRATE REPAIR**

- A. Repair substrate surface damaged during coating removal.
- B. Sand edges of adjacent soundly adhered existing coatings so they are tapered as smooth as practical to areas involved with coating removal.
- C. Clean and prime the substrate as specified.

### **3.7 APPLICATION**

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 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 items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- 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. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
  - 1. Paint the following work where exposed in equipment rooms:
    - a. Equipment, including panelboards and switch gear.
    - b. Uninsulated metal piping and exterior gas piping.
    - c. Pipe hangers and supports.
    - d. Metal conduit.

- e. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
- 2. Paint the following work where exposed in occupied spaces:
  - a. Uninsulated metal piping.
  - b. Pipe hangers and supports.
  - c. Metal conduit.
  - d. Duct, equipment, and pipe insulation having paintable jacket material.
  - e. Other items as directed by Professional.
- 3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

### **3.8 FIELD QUALITY CONTROL**

- A. Dry Film Thickness Testing: Department 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.

### **3.9 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.

### **3.10 EXTERIOR PAINTING SCHEDULE**

- A. CMU Substrates: Latex System:
  - 1. Prime Coat: Heavy Duty Block Filler, B42W46.
  - 2. Intermediate and Topcoat: A-100 Exterior Latex, A82-100 Series.

### **3.11 INTERIOR PAINTING SCHEDULE**

- A. CMU Substrates (E-PNT):
  - 1. Block Filler: Heavy Duty Block Filler, B42W46 Series.
  - 2. Intermediate and Topcoat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
- B. New and Existing Steel Substrates:
  - 1. Prime Coat: Pro Industrial Pro-Cryl Universal Metal Primer, B66-310 Series.
  - 2. Intermediate and Topcoat: Pro Industrial Waterbased Alkyd Urethane, B53-1150 Series.
- C. Gypsum Board Ceilings Substrates (E-PNT):
  - 1. Prime Coat: ProMar 200 Zero VOC Interior Latex Primer, B28W2600 Series.

2. Intermediate and Topcoat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
- D. CMU Substrates (E-PNT) – Painted Cove Base:
  1. Block Filler: Heavy Duty Block Filler, B42W46 Series.
  2. Intermediate and Topcoat: Pro Industrial Waterbased Acrolon 100 Gloss Packaged Black, B65B720 Series.
- E. CMU Substrates (E-PNT) – Shower Stalls (which do not receive ceramic tile finish):
  1. Block Filler: SW Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series.
  2. Intermediate Coat: SW Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
  3. Top Coat: SW Hi-Solids Polyurethane Semi-Gloss, B65-350 Series.

**END OF SECTION 09 90 00**