

## SECTION 099113 - EXTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes coating removal, surface preparation, and the application of paint systems on the following exterior substrates:
  - 1. Wood.
  - 2. Steel.
  - 3. Wood.
- B. Related Requirements:
  - 1. Section 062013 "Exterior Finish Carpentry" for repairs to exterior woodwork.

#### 1.3 REFERENCES

- A. MPI "Maintenance Repainting Manual" (MR Manual) August 2004 edition.
- B. Painting Contractors Association (PDCA) "PDCA Industry Standards" May 2019 edition.
- C. ASTM D3359 "Standard Test Methods for Rating Adhesion by Tape Test".

#### 1.4 DEFINITIONS

- A. MPI Gloss Levels:
  - 1. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
  - 2. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
  - 3. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
  - 4. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
  - 5. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
  - 6. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
  - 7. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

#### 1.5 ACTION SUBMITTALS

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

1. Indicate VOC content.
  - B. Samples for Initial Selection: For each type of topcoat product.
  - C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
    1. Submit Samples on rigid backing, 8 inches (200 mm) square.
    2. Label each coat of each Sample.
    3. 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.
  - E. Qualification Data: For Installer.
- 1.6 CLOSEOUT SUBMITTALS
- A. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.
- 1.7 MAINTENANCE MATERIAL SUBMITTALS
- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
    1. Paint: 10 gal. (38 L) of each material and color applied.
    2. Provide maintenance materials in new containers, full, tightly sealed and clearly labelled. Remnants of used materials are not acceptable.
- 1.8 TESTING
- A. General: Before beginning general paint and coatings removal or preparing mockups, test paint and coating removal methods on sample areas. A successful test is one where all loose and flaking paint and coatings are removed without causing damage or deterioration of the substrate. Tightly adhered paint and coatings may remain.
    1. Locate tests as directed by Architect.
    2. Size: 12" (4.72 cm) x 12" (4.72 cm).
  - B. Chemical Paint and Coatings Removal Method Patch Tests: Provide patch tests for chemical stripper to determine application thickness and dwell time. Perform tests in the presence of manufacturer's representative.
- 1.9 QUALITY ASSURANCE
- A. Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. Contractor shall provide a list of the last three comparable exterior repainting jobs including, name, location, specifying authority / project manager, start / completion dates and value of the work.

1. Field Supervision: Master Paint Institute (MPI) Maintenance Coating Specialist (MCS)
  2. Worker Qualifications: Master Paint Institute (MPI) Architectural Coating Technologist (ACT).
    - a. Workers performing lead paint remediation shall be RRP Certified.
- B. All materials, preparation and workmanship shall conform to the standards contained in the latest edition of the Master Painters Institute (MPI) Maintenance and Repainting Manual (herein referred to as the MPI Repainting Manual).
- C. Unless otherwise specified herein, all exterior repainting work shall be done in accordance with MPI Custom Grade requirements.
- D. Installation: The following requirements establish the standard of acceptance for the Work, when viewed using the final lighting source.
1. Vertical surfaces: No defects visible from a distance of 39 inches (1 meter) at 90 degrees to surface.
  2. Horizontal surfaces: No defects visible from a distance of 39 inches (1 meter) at 45 degrees to surface.
  3. Ceilings: No defects visible from floor at 45 degrees to surface.
  4. Final coat shall exhibit uniformity of sheen across full surface area.
  5. Defects include brush marks, streaks, runs, laps, drips, heavy stippling, pile up of paints, roller tracking, inadequate hiding of substrate, skipped or missed areas, and foreign materials in paint.
- E. 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. (9 sq. m).
    - 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. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacture's label with the following information:
1. Product name and type (description).
  2. Batch date.
  3. Color number.
  4. VOC content.
  5. Environmental handling requirements.
  6. Surface preparation requirements.
  7. Application instructions.

- B. 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.

#### 1.11 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (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.
- C. Hazardous Materials: Hazardous materials including lead paint are present in buildings and structures to be painted. A report on the presence of known hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
  - 1. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified.
  - 2. Perform preparation for painting of substrates known to include lead paint in accordance with EPA Renovation, Repair and Painting Rule and additional requirements of authorities having jurisdiction.
- D. WARRANTY
  - 1. Furnish a 100% two (2) year Maintenance Bond both in accordance with MPI Repainting Manual requirements. The Maintenance Bond shall be obtained from an approved bonding company and shall warrant that all repainting work has been performed in accordance with MPI Repainting Manual requirements.
    - a. All exterior repainting work shall be in accordance with MPI Repainting Manual requirements and shall be inspected by the Painting Association. The cost for such Painting Association inspections as well as either the Painting Association Guarantee or Maintenance Bond shall be included in the Base Bid Price.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis-of-Design Product (Wood Substrates): Subject to compliance with requirements, provide Sherwin-Williams Company (The); products indicated or comparable product from one of the following:
  - 1. Benjamin Moore & Co.
  - 2. Dulux (formerly ICI Paints); a brand of AkzoNobel.
  - 3. PPG Architectural Coatings.
- B. Basis-of-Design Product (Steel Substrates): Subject to compliance with requirements, provide Tnemec Company, Inc.; products indicated or comparable product from one of the following:
  - 1. Sherwin-Williams Company (The);
- C. Comparable Products: Comparable products of approved manufacturers will be considered in accordance with Section 016000 "Product Requirements," and the following:
  - 1. Products are approved by manufacturer in writing for application specified.

2. Products meet performance and physical characteristics of basis of design product including published ratio of solids by volume, plus or minus two percent.

D. Source Limitations: Obtain paint materials from single source from single listed manufacturer.

1. Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

## 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: For field applications, provide paints and coatings that complies with VOC content limits of authorities having jurisdiction.

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

## 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 inspect substates and preparation, and 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 paints 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. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

1. Report, in writing, conditions that may affect application, appearance, or performance of paint.

B. Substrate Conditions:

1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

- a. Wood: 15 percent.
- 2. The degree of surface deterioration (DSD) shall be assessed using the assessment criteria indicated in the MPI Maintenance Repainting Manual. In general, the MPI DSD ratings and descriptions are as follows:
  - a. DSD-0: Sound Surface (may include visual (aesthetic) defects that do not affect film's protective properties).
  - b. DSD-1: Slightly Deteriorated Surface (may show fading; gloss reduction, slight surface contamination, minor pin holes scratches, etc.), minor cosmetic defects (runs, sags, etc.).
  - c. DSD-2: Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, staining, etc.).
  - d. DSD-3: Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
  - e. DSD-4: Substrate Damage (repair or replacement of surface required by others).
- C. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Repainting Manual" applicable to substrates and paint systems 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.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
- D. 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 the following:
  - 1. SSPC-SP 3, "Power Tool Cleaning."
- E. Steel Substrates (Dome): Utilize caustic stripper to remove previous coatings using methods recommended in writing by paint manufacturer but not less than the following:
  - 1. SSPC-TU 6, "Chemical Stripping of Organic Coatings From Steel Structures."
- F. Wood Substrates:
  - 1. Prepare surfaces according to PDCA Standard P14, Level 3: Superior.
    - a. Pressure wash exterior surfaces prior to repainting in accordance with MPI standards for type of surfaces and recommended pressures to ensure complete removal of all loose paint, stains, dirt, and other foreign matter. This work shall be carried out only by qualified tradesman experienced in pressure water cleaning. The use of water hose cleaning will not be considered satisfactory, unless specifically specified. Allow sufficient drying time and test all surfaces using an electronic moisture meter before commencing work.
    - b. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
    - c. Sand surfaces that will be exposed to view, and dust off.

- d. Prime edges, ends, faces, and undersides of wood.
- e. 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 recommendations in "MPI Repainting Manual" Custom Grade finish requirements.
  - 1. Apply paint using airless sprayers.
  - 2. Paint surfaces behind movable items same as similar exposed surfaces.
- B. 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.
- C. Sand and dust between each coat to provide an anchor for next coat and to remove defects (runs, sags, etc.) visible from a distance up to 1000 mm (39").
- D. Do not apply finishes on exterior surfaces that are not sufficiently dry. Unless manufacturer's directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.
- E. To avoid air entrapment in applied coats, apply materials in strict accordance with manufacturer's spread rates and application requirements.
- F. Provide containment for chemical strippers per Manufacturer's written instructions and SSPC Guide 6 (Class 2C) to prevent residue from impacting the immediate environment.
  - 1. Remove stripper residue per Manufacturer's written instructions.

### 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.
- B. Repainted exterior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent:
  - 1. Brush / roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
  - 2. Evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.
  - 3. Damage due to touching before paint is sufficiently dry or any other contributory cause.
  - 4. Damage due to application on moist surfaces or caused by inadequate protection from the weather.
  - 5. Damage and/or contamination of paint due to wind blown contaminants (dust, sand blast materials, salt spray, etc.).
- C. Repainted exterior surfaces shall be considered unacceptable if any of the following are evident under natural lighting conditions:
  - 1. Visible defects are evident on vertical surfaces when viewed at 90 degrees to the surface from a distance of 1000 mm (39").
  - 2. Visible defects are evident on horizontal surfaces when viewed at 45 degrees to the surface from a distance of 1000 mm (39").

3. Visible defects are evident on soffit and other overhead surfaces when viewed at 45 degrees to the surface
4. When the final coat on any surface exhibits a lack of uniformity of sheen across full surface area.

- D. Repainted surfaces rejected shall be made good at the expense of the Contractor. Small affected areas may be touched up; large affected areas shall be repainted. Runs, sags of damaged paint shall be removed by scraper or by sanding prior to application of paint.

### 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. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.6 EXTERIOR PAINTING SCHEDULE

A. Wood Substrates:

1. Latex System:

- a. Prime Coat: Primer, latex for exterior wood.
  - 1) S-W 'Duration' Exterior Latex, K32-series, at 6.0 mils (0.153 mm) wet, 2.5 mils (0.064 mm) dry, per coat.
- b. Topcoat: Latex, exterior for wood.
  - 1) S-W 'Duration®' Exterior Latex, K32-series, at 6.0 mils (0.153 mm) wet, 2.5 mils (0.064 mm) dry, per coat.

B. Steel Substrates (Miscellaneous Metals):

1. Acrylic System:

- a. Prime Coat: Primer, acrylic for steel.
  - 1) S-W 'Pro Industrial™ Pro-Cryl®' Universal Primer, B66-1300 series, at 7.0 mils (0.178 mm) wet, 2.7 mils (0.069 mm) dry, per coat.
- b. Topcoat: Acrylic, exterior for wood.
  - 1) S-W 'Pro Industrial™' Exterior Acrylic, B66-650 series, at 6.0 mils (0.152 mm) wet, 2.2 mils (0.056 mm) dry, per coat.

C. Steel Substrates (Village Hall Dome):

1. Aliphatic Acrylic Polyurethane System:

- a. Prime Coat: Primer, zinc-rich.



- 1) Tnemec Hydro-Zinc, Series 94-H<sub>2</sub>O, at 5.0 mils (0.125 mm) wet, 3 mils (0.075 mm) dry, per coat.
- b. Intermediate Coat: Aliphatic acrylic polyurethane.
  - 1) Tnemec Endura-Shield® II, 1075, at 3.5 mils (0.090 mm) wet, 2.5 mils (0.064 mm) dry, per coat.
- c. Topcoat: Latex, exterior for exterior wood.
  - 1) Tnemec Fluoronar® Metallic, Series 1078, at 4.5 mils (0.115 mm) wet, 2.5 mils (0.064 mm) dry, per coat.

END OF SECTION 099113