SECTION 099113

EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Exposed concrete.
2. Exposed concrete masonry units (CMU).
3. Steel; Ferrous metal
4. Galvanized metal.
5. Aluminum (not anodized or otherwise coated).
6. Exposed wood on exterior.
7. Exterior gypsum board.

B. Exterior ferrous metal substrates, whether primed or galvanized; and bare aluminum substrates requiring surface preparation and application of paint systems include those comprising the following:

1. Lintels.
2. Pipe railings and posts.
3. Ladders.
4. Steps and platforms.
5. Hollow metal doors and frames.
6. Protruding structural steel framing.
7. Miscellaneous, field-fabricated metal closure trim not furnished by Metal Wall Panel system's supplier.
8. Field-fabricated roof equipment platforms such as for cooling towers.
9. Exhaust fan plenum boxes.
10. Boiler flues.
11. Gooseneck mechanical hoods, exhaust and intake.
12. Elevator shaft vent housings.
13. Roof-mounted electrical conduit with hardware.
14. Field-fabricated metal framework for carrying ductwork across roof.
15. Roof-mounted electrical conduit with hardware.

16. Surface-mounted electrical conduit with hardware.
17. Gooseneck pipe stacks at roof.
18. PVC drain leaders and outlets.
19. New miscellaneous mechanical louvers furnished with equipment (source different from architectural grade louvers).
20. Restorative Finishing of Existing Elements including the following:

    a. Mechanical equipment and supports to be reused in the Project.
    b. Louvers to be refurbished.
    c. Window framing damaged by new construction.

C. Related Sections include the following:

1. Division 05 Sections for shop priming of metal substrates with primers specified in this Section.
2. Division 06 Sections for shop priming carpentry with primers specified in this Section.
3. Division 08 Sections for factory priming hollow metal window frames and door frames with primers specified in this Section.
4. Division 09 Section "Interior Painting" for surface preparation and the application of paint systems on interior substrates.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: Color fan and Gloss/sheen card to permit Architect to select color and sheen for elements and substrates whose finishes are specified below with only a generic paint system.

C. Samples for Verification: For each type of paint system and each color and gloss--or sheen--of topcoat indicated both in the Exterior Painting Schedule below and the finish schedule on the Drawings.

1. Submit Samples on rigid backing, 8 inches (200 mm) 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 Master Painters Institute "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.4 QUALITY ASSURANCE

A. Master Painters Institute (MPI) Standards:

1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

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 (7 deg C).

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

1.6 PROJECT 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.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Benjamin Moore & Co.
2. Benjamin Moore & Co., Limited (Canada).

3. Bennette Paint Mfg. Co., Inc.
4. BLP Mobile Paint Manufacturing.
5. California Paints.
6. Cloverdale Paint.
7. Color Wheel Paints & Coatings.
8. Columbia Paint & Coatings.
9. Coronado Paint.
10. Davis Paint Company.
11. Del Technical Coatings.
12. Diamond Vogel Paints.
13. Dunn-Edwards Corporation.
14. Durant Paints Inc.
15. Duron, Inc.
16. Envirocoat Technologies Inc.
17. Farrell-Calhoun.
18. Flex Bon Paints.
19. Frazee Paint.
20. General Paint.
21. Griggs Paint.
22. Hallman Lindsay Quality Paints.
23. Hirshfield's, Inc.
24. ICI Devoe (Canada).
25. ICI Paints.
26. ICI Paints (Canada).
27. Insl-x.
28. Iowa Paint Manufacturing Company, Inc.
29. Kelly-Moore Paints.
30. Kwal-Howells Paint.
31. M.A.B. Paints.
32. McCormick Paints.
33. Miller Paint.
34. Mills Paint.
35. NCP Coatings.
36. Northern Paint.
37. PARA Paints.
38. Parker Paint Mfg. Co. Inc.
39. Porter Paints.
40. PPG Architectural Finishes, Inc.
41. Rodda Paint Co.
42. Sherwin-Williams Company (The).
43. Sico, Inc.
44. Sigma Coatings.
45. Smiland Paint Company.
46. Spectra-Tone.
47. Tamms Industries, Inc.
48. Tower Paint.
49. Vista Paint.

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. Colors: As selected by Architect from manufacturer's full range and as indicated in the finish schedule on the Drawings.

C. Gloss/Sheen: Produce gloss or sheen indicated in finish schedule on Drawings for specific substrates and/or elements. Sheen to corresponding to MPI Gloss Levels 1 through 9.

2.3 BLOCK FILLERS

A. Interior/Exterior Latex Block Filler: MPI #4.

1. VOC Content: E Range of E2 E3.

2.4 PRIMERS/SEALERS

A. Alkali-Resistant Primer: MPI #3.

1. VOC Content: E Range of E1.

B. Bonding Primer (Water Based): MPI #17.

1. VOC Content: E Range of E1 E2 E3.

C. Bonding Primer (Solvent Based): MPI #69.

1. VOC Content: E Range of E1.

D. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint system indicated.

2.5 METAL PRIMERS

A. Alkyd Anticorrosive Metal Primer: MPI #79.

1. VOC Content: E Range of E1.

B. Quick-Drying Alkyd Metal Primer: MPI #76.

1. VOC Content: E Range of E1.

C. Cementitious Galvanized-Metal Primer: MPI #26.

1. VOC Content: E Range of E1.

D. Waterborne Galvanized-Metal Primer: MPI #134.

1. VOC Content: E Range of E1 E2 E3.
2. Environmental Performance Rating: Minimum EPR 3.

E. Quick-Drying Primer for Aluminum: MPI #95.

1. VOC Content: E Range of E1 E2 E3.

2.6 WOOD PRIMERS

A. Exterior Latex Wood Primer: MPI #6.

1. VOC Content: E Range of E1 E2 E3.

B. Exterior Alkyd Wood Primer: MPI #5.

1. VOC Content: E Range of E2.

C. Exterior Oil Wood Primer: MPI #7.

1. VOC Content: E Range of E2.

2.7 EXTERIOR LATEX PAINTS

A. Exterior Latex (Flat): MPI #10 (Gloss Level 1).

1. VOC Content: E Range of E1 E2 E3.

B. Exterior Latex (Semigloss): MPI #11 (Gloss Level 5).

1. VOC Content: E Range of E1 E2 E3.

C. Exterior Latex (Gloss): MPI #119 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

1. VOC Content: E Range of E1 E2 E3.

2.8 EXTERIOR ALKYD PAINTS

A. Exterior Alkyd Enamel (Flat): MPI #8 (Gloss Level 1).

1. VOC Content: E Range of E1.

B. Exterior Alkyd Enamel (Semigloss): MPI #94 (Gloss Level 5).

1. VOC Content: E Range of E1.

C. Exterior Alkyd Enamel (Gloss): MPI #9 (Gloss Level 6).

1. VOC Content: E Range of E1.

2.9 QUICK-DRYING ENAMELS

A. Quick-Drying Enamel (Semigloss): MPI #81 (Gloss Level 5).

1. VOC Content: E Range of E1 E2 E3.

B. Quick-Drying Enamel (High Gloss): MPI #96 (Gloss Level 7).

1. VOC Content: E Range of E1 E2 E3.

2.10 ALUMINUM PAINT

A. Aluminum Paint: MPI #1.

1. VOC Content: E Range of E1, E2, & E3.

2.11 FLOOR COATINGS – MECHANICAL PENTHOUSE

A. Interior/Exterior Clear Concrete Floor Sealer (Water Based): MPI #99.

1. VOC Content: E Range of E1, E2, & E3.

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 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. Plaster: 12 percent.
5. Gypsum Board: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove plates, machined surfaces, and similar items already in place that 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.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

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

1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

D. 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.

E. Concrete Masonry Substrates: Remove 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. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.

G. 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.

H. Aluminum Substrates: Remove surface oxidation.

I. Wood Substrates:

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.

J. Plastic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

K. Exterior Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

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.

3.4 FIELD QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:

1. Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.

2. Testing agency will perform tests for compliance of paint materials 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.

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 EXTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System: MPI EXT 3.1A.

    a. Prime Coat: Exterior latex matching topcoat.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex (semigloss).

2. Latex Aggregate/Latex System: MPI EXT 3.1 B.

    a. Prime Coat: Latex stucco and masonry textured coating.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex (semigloss).

3. Latex Over Alkali-Resistant Primer System: MPI EXT 3.1K.

    a. Prime Coat: Alkali-resistant primer.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex (semigloss).

4. High-Build Latex System: MPI EXT 3.1L, applied to form dry film thickness of not less than 10 mils (0.25 mm).

    a. Prime Coat: As recommended in writing by topcoat manufacturer.
    b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
    c. Topcoat: High-build latex (exterior).

5. Latex Aggregate System: MPI EXT 3.1N.

    a. Prime Coat: As recommended in writing by topcoat manufacturer.
    b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
    c. Topcoat: Latex stucco and masonry textured coating.

B. Concrete Substrates, Traffic Surfaces:

1. Water-Based Clear Sealer System: MPI EXT 3.2H.

    a. Prime Coat: Interior/exterior clear concrete floor sealer (water based).
    b. Intermediate Coat: Interior/exterior clear concrete floor sealer (water based).
    c. Topcoat: Interior/exterior clear concrete floor sealer (water based).

C. CMU Substrates:

1. Latex System: MPI EXT 4.2A.

    a. Prime Coat: Interior/exterior latex block filler.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex (semigloss).

2. Latex Over Alkali-Resistant Primer System: MPI EXT 4.2L.

    a. Prime Coat: Alkali-resistant primer.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex (semigloss).

3. High-Build Latex System: MPI EXT 4.2K, applied to form dry film thickness of not less than 10 mils (0.25 mm).

    a. Prime Coat: As recommended in writing by topcoat manufacturer.
    b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
    c. Topcoat: High-build latex (exterior).

4. Latex Aggregate System: MPI EXT 4.2B.

    a. Prime Coat: As recommended in writing by topcoat manufacturer.
    b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
    c. Topcoat: Latex stucco and masonry textured coating.

D. Steel Substrates:

1. Quick-Drying Enamel System: MPI EXT 5.1A.

    a. Prime Coat: Quick-drying alkyd metal primer.
    b. Intermediate Coat: Quick-drying enamel matching topcoat.
    c. Topcoat: Quick-drying enamel (semigloss).

2. Alkyd System: MPI EXT 5.1D.

    a. Prime Coat: Alkyd anticorrosive metal primer.
    b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
    c. Topcoat: Exterior alkyd enamel (semigloss) (gloss).

3. Aluminum Paint System: MPI EXT 5.1K.

    a. Prime Coat: Alkyd anticorrosive metal primer.
    b. Intermediate Coat: Aluminum paint.
    c. Topcoat: Aluminum paint.

E. Galvanized-Metal Substrates:

1. Latex System: MPI EXT 5.3A.

    a. Prime Coat: Cementitious galvanized-metal primer.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex **(**semigloss) (gloss).

2. Latex Over Water-Based Primer System: MPI EXT 5.3H.

    a. Prime Coat: Waterborne galvanized-metal primer.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex **(**semigloss) (gloss).

3. Alkyd System: MPI EXT 5.3B.

    a. Prime Coat: Cementitious galvanized-metal primer.
    b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
    c. Topcoat: Exterior alkyd enamel (semigloss) (gloss).

F. Aluminum Substrates:

1. Latex System: MPI EXT 5.4H.

    a. Prime Coat: Quick-drying primer for aluminum.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex (semigloss) (gloss).

2. Alkyd System: MPI EXT 5.4F.

a. Prime Coat: Quick-drying primer for aluminum.
b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
c. Topcoat: Exterior alkyd enamel (semigloss) (gloss).

G. Dimension Lumber Substrates, Nontraffic Surfaces: Including where indicated on drawings.

1. Latex System: MPI EXT 6.2M.

a. Prime Coat: Exterior latex wood primer.
b. Intermediate Coat: Exterior latex matching topcoat.
c. Topcoat: Exterior latex (semigloss).

2. Latex Over Alkyd Primer System: MPI EXT 6.2A.

a. Prime Coat: Exterior alkyd wood primer.
b. Intermediate Coat: Exterior latex matching topcoat.
c. Topcoat: Exterior latex (semigloss).

3. Alkyd System: MPI EXT 6.2C.

a. Prime Coat: Exterior alkyd wood primer.
b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
c. Topcoat: Exterior alkyd enamel (semigloss).

H. Exterior Gypsum Board Substrates:

1. Latex System: MPI EXT 9.2A.

a. Prime Coat: Exterior latex matching topcoat.
b. Intermediate Coat: Exterior latex matching topcoat.
c. Topcoat: Exterior latex (semigloss) (gloss).

END OF SECTION 099113