SECTION 09 91 23 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

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

1. Concrete.
2. Concrete masonry units (CMU).
3. Steel.
4. Galvanized metal.
5. Aluminum (not anodized or otherwise coated).
6. Wood.
7. Gypsum board.
8. Plaster.
9. Cotton or canvas insulation covering.

1.2 SUBMITTALS

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

B. Samples: For each finish and for each color and texture required.

C. Product List: Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

D. LEED Submittals: For Credit EQ 4.2, manufacturers' product data for paints, including printed statement of VOC content and chemical components.

1.3 QUALITY ASSURANCE

A. MPI (Master Painters Institute) Standards:

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

B. Mockups: Apply benchmark samples 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. Owner will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

    a. Wall and Ceiling Surfaces: Provide samples of at least 100 sq. ft.
    b. Other Items: Owner will designate items or areas required.

2. Apply benchmark samples after permanent lighting and other environmental services have been activated.

3. Final approval of color selections will be based on benchmark samples.

    a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Owner at no added cost to Owner.

PART 2 - PRODUCTS

2.1 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. Chemical Components of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions; these requirements do not apply to primers or finishes that are applied in a fabrication or finishing shop:

1. Flat Paints and Coatings: VOC content of not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC content of not more than 150 g/L.
3. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
4. Restricted Components: Paints and coatings shall not contain any of the following:

    a. Acrolein.
    b. Acrylonitrile.
    c. Antimony.
    d. Benzene.
    e. Butyl benzyl phthalate.
    f. Cadmium.
    g. Di (2-ethylhexyl) phthalate.
    h. Di-n-butyl phthalate.
    i. Di-n-octyl phthalate.
    j. 1,2-dichlorobenzene.

k. Diethyl phthalate.
l. Dimethyl phthalate.
m. Ethylbenzene.
n. Formaldehyde.
o. Hexavalent chromium.
p. Isophorone.
q. Lead.
r. Mercury.
s. Methyl ethyl ketone.
t. Methyl isobutyl ketone.
u. Methylene chloride.
v. Naphthalene.
w. Toluene (methylbenzene).
x. 1,1,1-trichloroethane.
y. Vinyl chloride.

C. Colors: Match Owner's samples.

2.2 BLOCK FILLERS

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

2.3 PRIMERS/SEALERS

A. Interior Latex Primer/Sealer: MPI #50.

B. Interior Alkyd Primer/Sealer: MPI #45.

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

2.4 METAL PRIMERS

A. Alkyd Anticorrosive Metal Primer: MPI #79.

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

C. Rust-Inhibitive Primer (Water Based): MPI #107.

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

E. Vinyl Wash Primer: MPI #80.

2.5 WOOD PRIMERS

A. Interior Latex-Based Wood Primer: MPI #39.

2.6 LATEX PAINTS

A. Interior Latex (Flat): MPI #53 (Gloss Level 1).

B. Interior Latex (Low Sheen): MPI #44 (Gloss Level 2).

C. Interior Latex (Eggshell): MPI #52 (Gloss Level 3).

D. Interior Latex (Satin): MPI #43 (Gloss Level 4).

E. Interior Latex (Semigloss): MPI #54 (Gloss Level 5).

F. Interior Latex (Gloss): MPI #114 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

G. Institutional Low-Odor/VOC Latex (Flat): MPI #143 (Gloss Level 1).

H. Institutional Low-Odor/VOC Latex (Low Sheen): MPI #144 (Gloss Level 2).

I. Institutional Low-Odor/VOC Latex (Eggshell): MPI #145 (Gloss Level 3).

J. Institutional Low-Odor/VOC Latex (Semigloss): MPI #147 (Gloss Level 5).

K. High-Performance Architectural Latex (Low Sheen): MPI #138 (Gloss Level 2).

L. High-Performance Architectural Latex (Eggshell): MPI #139 (Gloss Level 3).

M. High-Performance Architectural Latex (Satin): MPI #140 (Gloss Level 4).

N. High-Performance Architectural Latex (Semigloss): MPI #141 (Gloss Level 5).

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

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

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

2.7 ALKYD PAINTS

A. Interior Alkyd (Flat): MPI #49 (Gloss Level 1).

B. Interior Alkyd (Eggshell): MPI #51 (Gloss Level 3).

C. Interior Alkyd (Semigloss): MPI #47 (Gloss Level 5).

D. Interior Alkyd (Gloss): MPI #48 (Gloss Level 6).

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

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

B. 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.

C. 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.

D. Painting Door and Glazing Frames: Paint shall be brushed not rolled.

E. Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:

1. Mechanical Work:

a. Uninsulated metal piping.
b. Uninsulated plastic piping.

c. Pipe hangers and supports.
d. Tanks that do not have factory-applied final finishes.
e. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
f. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
g. Mechanical equipment that is indicated to have a factory-primed finish for field painting.

2. Electrical Work:

a. Switchgear.
b. Panelboards.
c. Electrical equipment that is indicated to have a factory-primed finish for field painting.

F. 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 Owner, and leave in an undamaged condition.

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

3.3 INTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System: MPI INT 3.1E.

a. Prime Coat: Interior latex matching topcoat.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex (eggshell).

2. Latex Over Sealer System: MPI INT 3.1A.

a. Prime Coat: Interior latex primer/sealer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex (eggshell).

3. Latex Over Latex Aggregate System: MPI INT 3.1B.

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

4. Institutional Low-Odor/VOC Latex System: MPI INT 3.1M.

a. Prime Coat: Institutional low-odor/VOC interior latex matching topcoat.
b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
c. Topcoat: Institutional low-odor/VOC interior latex (eggshell).

5. High-Performance Architectural Latex System: MPI INT 3.1C.

    a. Prime Coat: Interior latex primer/sealer.
    b. Intermediate Coat: High-performance Architectural latex matching topcoat.
    c. Topcoat: High-performance Architectural latex (eggshell).

B. Concrete Substrates, Traffic Surfaces:

1. Latex Floor Enamel System: MPI INT 3.2A.

    a. Prime Coat: Interior/exterior latex floor and porch paint (low gloss).
    b. Intermediate Coat: Interior/exterior latex floor and porch paint (low gloss).
    c. Topcoat: Interior/exterior latex floor and porch paint (low gloss).

2. Alkyd Floor Enamel System: MPI INT 3.2B.

    a. Prime Coat: Exterior/interior alkyd floor enamel (gloss).
    b. Intermediate Coat: Exterior/interior alkyd floor enamel (gloss).
    c. Topcoat: Exterior/interior alkyd floor enamel (gloss).

3. Concrete Stain System: MPI INT 3.2E.

    a. First Coat: Interior concrete floor stain.
    b. Topcoat: Interior concrete floor stain.

4. Clear Sealer System: MPI INT 3.2F.

    a. First Coat: Interior/exterior clear concrete floor sealer (solvent based).
    b. Topcoat: Interior/exterior clear concrete floor sealer (solvent based).

5. Water-Based Clear Sealer System: MPI INT 3.2G.

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

C. Clay-Masonry Substrates:

1. Latex System: MPI INT 4.1A.

    a. Prime Coat: Interior latex matching topcoat.
    b. Intermediate Coat: Interior latex matching topcoat.
    c. Topcoat: Interior latex (low sheen).

2. Alkyd System: MPI INT 4.1D.

    a. Prime Coat: Interior latex primer/sealer.
    b. Intermediate Coat: Interior alkyd matching topcoat.
    c. Topcoat: Interior alkyd (eggshell).

3. Latex Aggregate System: MPI INT 4.1B.

   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.

4. Institutional Low-Odor/VOC Latex System: MPI INT 4.1M.

   a. Prime Coat: Institutional low-odor/VOC interior latex matching topcoat.
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (eggshell).

5. High-Performance Architectural Latex System: MPI INT 4.1L.

   a. Prime Coat: High-performance Architectural latex matching topcoat.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex (eggshell).

D. CMU Substrates:

1. Latex System: MPI INT 4.2A.

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

2. Alkyd System: MPI INT 4.2C.

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

3. Alkyd Over Latex Sealer System: MPI INT 4.2N.

   a. Prime Coat: Interior/exterior latex block filler.
   b. Sealer Coat: Interior latex primer/sealer.
   c. Intermediate Coat: Interior alkyd matching topcoat.
   d. Topcoat: Interior alkyd (eggshell).

4. Institutional Low-Odor/VOC Latex System: MPI INT 4.2E.

   a. Prime Coat: Interior/exterior latex block filler.
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (eggshell).

5. High-Performance Architectural Latex System: MPI INT 4.2D.

   a. Prime Coat: Interior/exterior latex block filler.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex (eggshell).

E. Steel Substrates:

1. Quick-Drying Enamel System: MPI INT 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. Water-Based Dry-Fall System: MPI INT 5.1C.

   a. Prime Coat: Alkyd anticorrosive metal primer.
   b. Topcoat: Latex dry fog/fall.

3. Alkyd Dry-Fall System: MPI INT 5.1D.

   a. Prime Coat: Alkyd anticorrosive metal primer.
   b. Topcoat: Interior alkyd dry fog/fall.

4. Latex Over Alkyd Primer System: MPI INT 5.1Q.

   a. Prime Coat: Alkyd anticorrosive metal primer.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (low sheen).

5. Alkyd System: MPI INT 5.1E.

   a. Prime Coat: Alkyd anticorrosive metal primer.
   b. Intermediate Coat: Interior alkyd matching topcoat.
   c. Topcoat: Interior alkyd (eggshell).

6. Aluminum Paint System: MPI INT 5.1M.

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

7. Institutional Low-Odor/VOC Latex System: MPI INT 5.1S.

   a. Prime Coat: Rust-inhibitive primer (water based).
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (low sheen).

8. High-Performance Architectural Latex System: MPI INT 5.1R.

   a. Prime Coat: quick drying metal primer.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex (eggshell).

F. Galvanized-Metal Substrates:

1. Water-Based Dry-Fall System: MPI INT 5.3H.

   a. Prime Coat: Waterborne dry fall.
   b. Topcoat: Waterborne dry fall.

2. Alkyd Dry-Fall System: MPI INT 5.3F.

   a. Prime Coat: Cementitious galvanized-metal primer.
   b. Topcoat: Interior alkyd dry fog/fall.

3. Latex System: MPI INT 5.3A.

   a. Prime Coat: Cementitious galvanized-metal primer.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (low sheen).

4. Latex Over Waterborne Primer System: MPI INT 5.3J.

   a. Prime Coat: Waterborne galvanized-metal primer.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (low sheen).

5. Alkyd System: MPI INT 5.3C.

   a. Prime Coat: Cementitious galvanized-metal primer.
   b. Intermediate Coat: Interior alkyd matching topcoat.
   c. Topcoat: Interior alkyd (eggshell).

6. Aluminum Paint System: MPI INT 5.3G.

   a. Prime Coat: Cementitious galvanized-metal primer.
   b. Intermediate Coat: Aluminum paint.
   c. Topcoat: Aluminum paint.

7. Institutional Low-Odor/VOC Latex System: MPI INT 5.3N.

   a. Prime Coat: Waterborne galvanized-metal primer.
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (low sheen).

8. High-Performance Architectural Latex System: MPI INT 5.3M.

   a. Prime Coat: Waterborne galvanized-metal primer.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex (eggshell).

G. Glue-Laminated Beam and Column Substrates:

1. Latex System: MPI INT 6.1M.

   a. Prime Coat: Interior latex-based wood primer.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (eggshell).

2. Latex Over Alkyd Primer System: MPI INT 6.1A.

   a. Prime Coat: Interior alkyd primer/sealer.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (eggshell).

3. Institutional Low-Odor/VOC Latex System: MPI INT 6.1Q.

   a. Prime Coat: Interior latex-based wood primer.
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (eggshell).

4. High-Performance Architectural Latex System: MPI INT 6.1N.

   a. Prime Coat: Interior latex-based wood primer.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex (eggshell).

H. Dressed Lumber Substrates: Including Architectural woodwork and doors.

1. Latex System: MPI INT 6.3T.

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

2. Institutional Low-Odor/VOC Latex System: MPI INT 6.3V.

   a. Prime Coat: Interior latex-based wood primer.
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (low sheen).

3. High-Performance Architectural Latex System: MPI INT 6.3A.

   a. Prime Coat: Interior latex-based wood primer.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex (eggshell).

I. Wood Panel Substrates: Including painted plywood and medium-density fiberboard.

1. Latex System: MPI INT 6.4R.

   a. Prime Coat: Interior latex-based wood primer.

b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex (semigloss).

2. Latex Over Alkyd Primer System: MPI INT 6.4A.

a. Prime Coat: Interior alkyd primer/sealer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex (eggshell).

3. Alkyd System: MPI INT 6.4B.

a. Prime Coat: Interior alkyd primer/sealer.
b. Intermediate Coat: Interior alkyd matching topcoat.
c. Topcoat: Interior alkyd (eggshell).

4. Institutional Low-Odor/VOC Latex System: MPI INT 6.4T.

a. Prime Coat: Interior latex-based wood primer.
b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
c. Topcoat: Institutional low-odor/VOC interior latex (low sheen).

5. High-Performance Architectural Latex System: MPI INT 6.4S.

a. Prime Coat: Interior latex-based wood primer.
b. Intermediate Coat: High-performance Architectural latex matching topcoat.
c. Topcoat: High-performance Architectural latex (eggshell).

J. Dimension Lumber Substrates, Nontraffic Surfaces: Including exposed joists and exposed beams.

1. Latex System: MPI INT 6.2D.

a. Prime Coat: Interior latex-based wood primer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex (eggshell).

2. Institutional Low-Odor/VOC Latex System: MPI INT 6.2L.

a. Prime Coat: Interior latex-based wood primer.
b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
c. Topcoat: Institutional low-odor/VOC interior latex (low sheen).

3. High-Performance Architectural Latex System: MPI INT 6.2B.

a. Prime Coat: Interior alkyd primer/sealer.
b. Intermediate Coat: High-performance Architectural latex matching topcoat.
c. Topcoat: High-performance Architectural latex (eggshell).

K. Gypsum Board Substrates:

1. Latex System: MPI INT 9.2A.

   a. Prime Coat: Interior latex primer/sealer matching topcoat.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (eggshell).

2. Institutional Low-Odor/VOC Latex System: MPI INT 9.2M.

   a. Prime Coat: Interior latex primer/sealer.
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (eggshell).

3. High-Performance Architectural Latex System: MPI INT 9.2B.

   a. Prime Coat: Interior latex primer/sealer.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex (eggshell).

L. Plaster Substrates:

1. Latex System: MPI INT 9.2A.

   a. Prime Coat: Interior latex primer/sealer matching topcoat.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (eggshell).

2. Institutional Low-Odor/VOC Latex System: MPI INT 9.2M.

   a. Prime Coat: Interior latex primer/sealer.
   b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
   c. Topcoat: Institutional low-odor/VOC interior latex (eggshell).

3. High-Performance Architectural Latex System: MPI INT 9.2B.

   a. Prime Coat: Interior latex primer/sealer.
   b. Intermediate Coat: High-performance Architectural latex matching topcoat.
   c. Topcoat: High-performance Architectural latex, (eggshell).

M. Cotton or Canvas Insulation-Covering Substrates: Including pipe and duct coverings.

1. Latex System: MPI INT 10.1A.

   a. Prime Coat: Interior latex primer/sealer matching topcoat.
   b. Intermediate Coat: Interior latex matching topcoat.
   c. Topcoat: Interior latex (flat).

2. Institutional Low-Odor/VOC Latex System: MPI INT 10.1D.

   a. Prime Coat: Interior latex primer/sealer.

b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
c. Topcoat: Institutional low-odor/VOC interior latex (flat).

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