SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section specifies field painting.

B. Section specifies prime coats which may be applied in shop under other sections.

1.2 RELATED WORK

A. Type of Finish, Color, and Gloss Level of Finish Coat: to match existing.

1.3 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Manufacturer's Literature and Data:

1. Before work is started, or sample panels are prepared, submit manufacturer's literature, the current Master Painters Institute (MPI) "Approved Product List" indicating brand label, product name and product code as of the date of Contract award, will be used to determine compliance with the submittal requirements of this specification. The Contractor may choose to use subsequent MPI "Approved Product List", however, only one list may be used for the entire Contract and each coating system is to be from a single manufacturer. All coats on a particular substrate must be from a single manufacturer. No variation from the MPI "Approved Product List" where applicable is acceptable.

C. Sample Panels:

1. After painters' materials have been approved and before work is started submit sample panels showing each type of finish and color specified.

2. Panels to show color: Composition board, 100 by 250 by 3 mm (4 inch by 10 inch by 1/8 inch).

3. Attach labels to panel stating the following:

a. Federal Specification Number or manufacturers name and product number of paints used.

b. Product type and color.

c. Name of project.

4. Strips showing not less than 50 mm (2 inch) wide strips of undercoats and 100 mm (4 inch) wide strip of finish coat.

D. Sample of identity markers if used.

E. Manufacturers' Certificates indicating compliance with specified requirements:

1. Manufacturer's paint substituted for Federal Specification paints meets or exceeds performance of paint specified.

1.4 DELIVERY AND STORAGE

A. Deliver materials to site in manufacturer's sealed container marked to show following:

1. Name of manufacturer.
2. Product type.
3. Batch number.
4. Instructions for use.
5. Safety precautions.

B. In addition to manufacturer's label, provide a label legibly printed as following:

1. Federal Specification Number, where applicable, and name of material.
2. Surface upon which material is to be applied.
3. If paint or other coating, state coat types; prime, body or finish.

C. Maintain space for storage, and handling of painting materials and equipment in a neat and orderly condition to prevent spontaneous combustion from occurring or igniting adjacent items.

D. Store materials at site at least 24 hours before using, at a temperature between 18 and 30 degrees C (65 and 85 degrees F).

1.5 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by basic designation only.

B. American Conference of Governmental Industrial Hygienists (ACGIH):

1. ACGIH TLV-BKLT-2008 Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs)
2. ACGIH TLV-DOC-2008 Documentation of Threshold Limit Values and Biological Exposure Indices, (Seventh Edition)

C. American National Standards Institute (ANSI):

1. A13.1-07 Scheme for the Identification of Piping Systems

D. Commercial Item Description (CID):

1. A-A-1555 Water Paint, Powder (Cementitious, White and Colors) (WPC) (cancelled)

E. Federal Specifications (Fed Spec):

1. TT-P-1411A Paint, Copolymer-Resin, Cementitious (For Waterproofing Concrete and Masonry Walls) (CEP)

F. Master Painters Institute (MPI):

1. 4-07 Interior/ Exterior Latex Block Filler
2. 26-07 Cementitious Galvanized Metal Primer
3. 46-07 Interior Enamel Undercoat
4. 50-07 Interior Latex Primer Sealer
5. 52-07 Interior Latex, MPI Gloss Level 3 (LE)
6. 53-07 Interior Latex, Flat, MPI Gloss Level 1 (LE)

7. 54-07 Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cementitious Paint (CEP): TT-P-1411A Paint, Copolymer-Resin, Cementitious (CEP), , Type II for interior use.

B. Identity markers options:

1. Pressure sensitive vinyl markers.
2. Snap-on coil plastic markers.

C. Interior/Exterior Latex Block Filler: MPI 4.

D. Exterior Alkyd Enamel (EO): MPI 9.

E. Interior Low Sheen Latex: MPI 44.

F. Interior Primer Sealer: MPI 45.

G. Interior Enamel Undercoat: MPI 47.

H. Interior Latex Primer Sealer: MPI 50.

I. Interior Latex, Flat, MPI Gloss Level 1 (LE): MPI 53.

J. Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE): MPI 54.

K. Fast Drying Metal Primer: MPI 95.

L. Interior High Performance Latex, MPI Gloss Level 2(LF): MPI 138.

M. Interior High Performance Latex, MPI Gloss Level 3 (LL): MPI 139.

N. Interior High Performance Latex (SG), MPI Gloss Level 5: MPI 141.

O. Interior High Performace Latex (SG, MPI Gloss Level 5: MPI 141.

2.2 PAINT PROPERTIES

A. Use ready-mixed (including colors), except two component epoxies, polyurethanes, polyesters, paints having metallic powders packaged separately and paints requiring specified additives.

B. Where no requirements are given in the referenced specifications for primers, use primers with pigment and vehicle, compatible with substrate and finish coats specified.

2.3 REGULATORY REQUIREMENTS/QUALITY ASSURANCE

A. Paint materials shall conform to the restrictions of the local Environmental and Toxic Control jurisdiction.

1. Volatile Organic Compounds (VOC): VOC content of paint materials shall not exceed 10g/l for interior latex paints/primers and 50g/l for exterior latex paints and primers.
2. Asbestos: Materials shall not contain asbestos.
3. Human Carcinogens: Materials shall not contain any of the ACGIH-BKLT and ACGHI-DOC confirmed or suspected human carcinogens.
4. Use high performance acrylic paints in place of alkyd paints, where possible.
5. VOC content for solvent-based paints shall not exceed 250g/l and shall not be formulated with more than one percent aromatic hydro carbons by

weight.

PART 3 - EXECUTION

3.1 JOB CONDITIONS

A. Safety: Observe required safety regulations and manufacturer's warning and instructions for storage, handling and application of painting materials.

1. Take necessary precautions to protect personnel and property from hazards due to falls, injuries, toxic fumes, fire, explosion, or other harm.

2. Deposit soiled cleaning rags and waste materials in metal containers approved for that purpose. Dispose of such items off the site at end of each days work.

B. Atmospheric and Surface Conditions:

1. Do not apply coating when air or substrate conditions are:

a. Less than 3 degrees C (5 degrees F) above dew point.

b. Below 10 degrees C (50 degrees F) or over 35 degrees C (95 degrees F), unless specifically pre-approved by the Contracting Officer and the product manufacturer. Under no circumstances shall application conditions exceed manufacturer recommendations.

2. Maintain interior temperatures until paint dries hard.

3. Do no exterior painting when it is windy and dusty.

4. Do not paint in direct sunlight or on surfaces that the sun will soon warm.

5. Apply only on clean, dry and frost free surfaces except as follows:

a. Apply water thinned acrylic and cementitious paints to damp (not wet) surfaces where allowed by manufacturer's printed instructions.

b. Dampened with a fine mist of water on hot dry days concrete and masonry surfaces to which water thinned acrylic and cementitious paints are applied to prevent excessive suction and to cool surface.

3.2 SURFACE PREPARATION

A. Method of surface preparation is optional, provided results of finish painting produce solid even color and texture specified with no overlays.

B. General:

1. Remove prefinished items not to be painted such as lighting fixtures, escutcheon plates, hardware, trim, and similar items for reinstallation after paint is dried.

2. Remove items for reinstallation and complete painting of such items and adjacent areas when item or adjacent surface is not accessible or finish is different.

3. See other sections of specifications for specified surface conditions and prime coat.

4. Clean surfaces for painting with materials and methods compatible with substrate and specified finish. Remove any residue remaining from cleaning agents used. Do not use solvents, acid, or steam on concrete and masonry.

C. Gypsum Plaster and Gypsum Board:

1. Remove efflorescence, loose and chalking plaster or finishing materials.
2. Remove dust, dirt, and other deterrents to paint adhesion.
3. Fill holes, cracks, and other depressions with CID-A-A-1272A Gypsum (Spackling Compound) finished flush with adjacent surface, with texture to match texture of adjacent surface. Patch holes over 25 mm (1-inch) in diameter as specified in Section for plaster or gypsum board.

3.3 PAINT PREPARATION

A. Thoroughly mix painting materials to ensure uniformity of color, complete dispersion of pigment and uniform composition.

B. Do not thin unless necessary for application and when finish paint is used for body and prime coats. Use materials and quantities for thinning as specified in manufacturer's printed instructions.

C. Remove paint skins, then strain paint through commercial paint strainer to remove lumps and other particles.

D. Mix two component and two part paint and those requiring additives in such a manner as to uniformly blend as specified in manufacturer's printed instructions unless specified otherwise.

E. For tinting required to produce exact shades specified, use color pigment recommended by the paint manufacturer.

3.4 APPLICATION

A. Start of surface preparation or painting will be construed as acceptance of the surface as satisfactory for the application of materials.

B. Unless otherwise specified, apply paint in three coats; prime, body, and finish. When two coats applied to prime coat are the same, first coat applied over primer is body coat and second coat is finish coat.

C. Apply each coat evenly and cover substrate completely.

D. Allow not less than 48 hours between application of succeeding coats, except as allowed by manufacturer's printed instructions, and approved by COTR.

E. Finish surfaces to show solid even color, free from runs, lumps, brushmarks, laps, holidays, or other defects.

F. Apply by brush, roller or spray, except as otherwise specified.

G. Do not spray paint in existing occupied spaces unless approved by COTR, except in spaces sealed from existing occupied spaces.

1. Apply painting materials specifically required by manufacturer to be applied by spraying.
2. In areas, where paint is applied by spray, mask or enclose with polyethylene, or similar air tight material with edges and seams continuously sealed including items specified in WORK NOT PAINTED, motors, controls, telephone, and electrical equipment, fronts of sterilizes and other recessed equipment and similar prefinished items.

H. Do not paint in closed position operable items such as access doors and panels, window sashes, overhead doors, and similar items except overhead roll-up doors and shutters.

3.5 PRIME PAINTING

A. After surface preparation prime surfaces before application of body and

finish coats, except as otherwise specified.

B. Spot prime and apply body coat to damaged and abraded painted surfaces before applying succeeding coats.

C. Additional field applied prime coats over shop or factory applied prime coats are not required except for exterior exposed steel apply an additional prime coat.

D. Prime rebates for stop and face glazing of wood, and for face glazing of steel.

E. Metals except boilers, incinerator stacks, and engine exhaust pipes:

1. Steel and iron: MPI 95 (Fast Drying Metal Primer) finish is specified.

2. Copper and copper alloys scheduled to be painted: MPI 95 (Fast Drying Metal Primer).

3. Machinery not factory finished: MPI 9 (Exterior Alkyd Enamel (EO)).

F. Gypsum Board:

1. Surfaces scheduled to have MPI 53 (Interior Latex, Flat) MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)) MPI 53 (Interior Latex, MPI Gloss Level 3 (LE)) .

2. Primer: MPI 50(Interior Latex Primer Sealer) except use MPI 45 (Interior Primer Sealer) MPI 46 (Interior Enamel Undercoat) in shower and bathrooms.

3.6 INTERIOR FINISHES

A. Apply following finish coats over prime coats in spaces or on surfaces specified in the drawings.

B. Metal Work:

1. Apply to exposed surfaces.

2. Omit body and finish coats on surfaces concealed after installation except electrical conduit containing conductors over 600 volts.

3. Ferrous Metal, Galvanized Metal, and Other Metals Scheduled:

a. Two coats of MPI 48 (Interior Alkyd Gloss (AK)) MPI 51 (Interior Alkyd, Eggshell (AK0).

b. Machinery: One coat MPI 9 (Exterior Alkyd Enamel (EO)).

C. Gypsum Board:

1. One coat of MPI 45 (Interior Primer Sealer) plus one coat of MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE) or MPI 114 (Interior Latex, Gloss (LE) and (LG)).

D. Masonry and Concrete Walls:

1. Over MPI 4 (Interior/Exterior Latex Block Filler) on CMU surfaces.

2. Two coats of MPI 139 (Interior High Performance Latex, MPI Gloss level 3 (LL)).

E. Concrete Floors: One coat of MPI 68 (Interior/ Exterior Latex Porch & Floor Paint, Gloss (FE)).

3.7 REFINISHING EXISTING PAINTED SURFACES

A. Clean, patch and repair existing surfaces as specified under surface

preparation.

B. Remove and reinstall items as specified under surface preparation.

C. Remove existing finishes or apply separation coats to prevent non compatible coatings from having contact.

D. Patched or Replaced Areas in Surfaces and Components: Apply spot prime and body coats as specified for new work to repaired areas or replaced components.

E. Except where scheduled for complete painting apply finish coat over plane surface to nearest break in plane, such as corner, reveal, or frame.

F. In existing rooms and areas where alterations occur, clean existing stained and natural finished wood retouch abraded surfaces and then give entire surface one coat of MPI 31 (Polyurethane, Moisture Cured, Clear Gloss) MPI 71 (Polyurethane, Moisture Cured, Clear Flat (PV)).

G. Refinish areas as specified for new work to match adjoining work unless specified or scheduled otherwise.

H. Coat knots and pitch streaks showing through old finish with MPI 36 (Knot Sealer) before refinishing.

I. Sand or dull glossy surfaces prior to painting.

J. Sand existing coatings to a feather edge so that transition between new and existing finish will not show in finished work.

3.8 PAINT COLOR

A. Color and gloss of finish coats to match existing, **Sherwin-Williams, pre-catalyzed, water based epoxy, eggshell, 6456 “Slow Green”.**

B. Coat Colors:

1. Color of priming coat: Lighter than body coat.
2. Color of body coat: Lighter than finish coat.
3. Color prime and body coats to not show through the finish coat and to mask surface imperfections or contrasts.

C. Painting, Caulking, Closures, and Fillers Adjacent to Casework:

1. Paint to match color of casework where casework has a paint finish.
2. Paint to match color of wall where casework is stainless steel, plastic laminate, or varnished wood.

3.9 MECHANICAL AND ELECTRICAL WORK FIELD PAINTING SCHEDULE

A. Field painting of mechanical and electrical consists of cleaning, touching-up abraded shop prime coats, and applying prime, body and finish coats to materials and equipment if not factory finished in space scheduled to be finished.

B. In spaces not scheduled to be finish painted on finish drawings paint as specified under paragraph H, colors.

C. Paint various systems specified in Division 02 – EXISTING CONDITIONS, Division 26 - ELECTRICAL, and Division 28 Ó ELECTRONIC SAFETY AND SECURITY.

D. Paint after tests have been completed.

E. Omit prime coat from factory prime-coated items.

F. Finish painting of mechanical and electrical equipment is not required when

located in interstitial spaces, above suspended ceilings, in concealed areas such as pipe and electric closets, pipe basements, pipe tunnels, trenches, attics, roof spaces, shafts and furred spaces except on electrical conduit containing feeders 600 volts or more.

G. Omit field painting of items specified in paragraph, Building and Structural WORK NOT PAINTED.

H. Color:

1. Paint items having no color specified to match surrounding surfaces.

2. Paint colors as specified to match surrounding surfaces except for following:

a. Gray: Heating, ventilating, air conditioning and refrigeration equipment (except as required to match surrounding surfaces), and water and sewage treatment equipment and sewage ejection equipment.

b. Aluminum Color: Ferrous metal on outside of boilers and in connection with boiler settings including supporting doors and door frames and fuel oil burning equipment, and steam generation system (bare piping, fittings, hangers, supports, valves, traps and miscellaneous iron work in contact with pipe).

c. Federal Safety Red: Exposed fire protection piping hydrants, post indicators, electrical conducts containing fire alarm control wiring, and fire alarm equipment.

d. Federal Safety Orange: Entire lengths of electrical conduits containing feeders 600 volts or more.

e. Color to match brickwork sheet metal covering on breeching outside of exterior wall of boiler house.

I. Apply paint systems on properly prepared and primed surface as follows:

1. Interior Locations:

a. Apply two coats of MPI 47 (Interior Alkyd, Semi-Gloss (AK)) to following items:

1) Metal under 94 degrees C (200 degrees F) of items such as bare piping, fittings, hangers and supports.

2) Equipment and systems such as hinged covers and frames for control cabinets and boxes, cast-iron radiators, electric conduits and panel boards.

b. Apply one coat of MPI 50 (Interior Latex Primer Sealer) and one coat of MPI 53 (Interior Latex, Flat, MPI Gloss Level 1 (LE)) on finish of insulation on boiler breeching and uptakes inside boiler house, drums, drumheads, oil heaters, feed water heaters, tanks and piping.

c. Paint electrical conduits containing cables rated 600 volts or more using two coats of MPI 9 (Exterior Alkyd Enamel (EO) in the Federal Safety Orange color in exposed and concealed spaces full length of conduit.

2. Other exposed locations:

a. Metal surfaces, except aluminum, of cooling towers exposed to view, including connected pipes, rails, and ladders: Two coats of MPI 1 (Aluminum Paint (AP)).

b. Cloth jackets of insulation of ducts and pipes in connection with plumbing, air conditioning, ventilating refrigeration and heating

systems: One coat of MPI 50 (Interior Latex Primer Sealer) and one coat of MPI 10 (Exterior Latex, Flat.

3. See Sections for methods of identification, legends, and abbreviations of the following:

   a. Conduits containing high voltage feeders over 600 volts: Section 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS / Section 27 05 33, RACEWAYS AND BOXES FOR COMMUNICATIONS SYSTEMS / Section 28 05 33, RACEWAYS AND BOXES FOR ELECTRONIC SAFETY AND SECURITY.

3.10 PROTECTION CLEAN UP, AND TOUCH-UP

A. Protect work from paint droppings and spattering by use of masking, drop cloths, removal of items or by other approved methods.

B. Upon completion, clean paint from hardware, glass and other surfaces and items not required to be painted of paint drops or smears.

C. Before final inspection, touch-up or refinished in a manner to produce solid even color and finish texture, free from defects in work which was damaged or discolored.

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APPENDIX

Paint or coating	Abbreviation
Acrylic Emulsion	AE (MPI 10 – flat/MPI 11 – semigloss/MPI 119 - gloss)
Alkyd Flat	Ak (MPI 49)
Alkyd Gloss Enamel	G (MPI 48)
Alkyd Semigloss Enamel	SG (MPI 47)
Aluminum Paint	AP (MPI 1)
Cementitious Paint	CEP (TT-P-1411)
Exterior Latex	EL??(MPI 10 / 11 / 119)??
Exterior Oil	EO (MPI 9 – gloss/MPI 8 – flat/MPI 94 – semigloss)
Epoxy Coating	EC (MPI 77 – walls, floors/MPI 108 – CMU, concrete)
Fire Retardant Paint	FR (MPI 67)
Fire Retardant Coating (Clear)	FC (MPI 66, intumescent type)
Floor Enamel	FE (MPI 27 – gloss/MPI 59 – eggshell)
Heat Resistant Paint	HR (MPI 22)
Latex Emulsion	LE (MPI 53, flat/MPI 52, eggshell/MPI 54, semigloss/MPI 114, gloss Level 6
Latex Flat	LF (MPI 138)
Latex Gloss	LG (MPI 114)
Latex Semigloss	SG (MPI 141)
Latex Low Luster	LL (MPI 139)
Plastic Floor Coating	PL
Polyurethane Varnish	PV (MPI 31 – gloss/MPI 71 - flat)
Rubber Paint	RF (CID-A-A-3120 - Paint for Swimming Pools (RF).
Water Paint, Cement	WPC (CID-A-A-1555 - Water Paint, Powder).

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