

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.
- C. Painting includes shellacs, stains, varnishes, coatings specified, and striping or markers and identity markings.

1.2 RELATED WORK

- A. Type of Finish, Color, and Gloss Level of Finish Coat: As directed on the drawings.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
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.
 - 5. Strips showing not less than 50 mm (2 inch) wide strips of undercoats and 100 mm (4 inch) wide strip of finish coat.

D. 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 MOCK-UP PANEL

A. Before starting application of water paint mixtures, apply paint as specified to an area, not to exceed 9 m² (100 ft²), selected by Owner's Representative.

B. Finish and texture approved by Owner's Representative will be used as a standard of quality for remainder of work.

1.6 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):
ACGIH TLV-BKLT-1992.....Threshold Limit Values (TLV) for Chemical
Substances and Physical Agents and Biological
Exposure Indices (BEIs)

ACGIH TLV-DOC.....Documentation of Threshold Limit Values and
Biological Exposure Indices, (Sixth Edition)

C. American National Standards Institute (ANSI):

A13.1-96.....Scheme for the Identification of Piping Systems

D. American Society for Testing and Materials (ASTM):

D260-86.....Boiled Linseed Oil

E. Commercial Item Description (CID):

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

A-A-3120.....Paint, For Swimming Pools (RF) (cancelled)

F. Federal Specifications (Fed Spec):

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

G. Master Painters Institute (MPI):

No. 1-04.....Aluminum Paint (AP)

No. 4-04.....Interior/ Exterior Latex Block Filler

No. 5-04.....Exterior Alkyd Wood Primer

No. 7-04.....Exterior Oil Wood Primer

No. 8-04.....Exterior Alkyd, Flat MPI Gloss Level 1 (EO)

No. 9-04.....Exterior Alkyd Enamel MPI Gloss Level 6 (EO)

No. 10-04.....Exterior Latex, Flat (AE)

No. 11-04.....Exterior Latex, Semi-Gloss (AE)

No. 18-04.....Organic Zinc Rich Primer

No. 22-04.....Aluminum Paint, High Heat (up to 590° - 1100°F)
(HR)

No. 26-04.....Cementitious Galvanized Metal Primer

No. 27-04.....Exterior / Interior Alkyd Floor Enamel, Gloss
(FE)

No. 31-04.....Polyurethane, Moisture Cured, Clear Gloss (PV)

No. 36-04.....Knot Sealer

No. 43-04.....Interior Satin Latex, MPI Gloss Level 4

No. 44-04.....Interior Low Sheen Latex, MPI Gloss Level 2

No. 45-04.....Interior Primer Sealer

No. 46-04.....Interior Enamel Undercoat

No. 47-04.....Interior Alkyd, Semi-Gloss, MPI Gloss Level 5
(AK)

No. 48-04.....Interior Alkyd, Gloss, MPI Gloss Level 6 (AK)

No. 49-04.....Interior Alkyd, Flat, MPI Gloss Level 1 (AK)

No. 50-04.....Interior Latex Primer Sealer

No. 51-04.....Interior Alkyd, Eggshell, MPI Gloss Level 3

No. 52-04.....Interior Latex, MPI Gloss Level 3 (LE)

No. 53-04.....Interior Latex, Flat, MPI Gloss Level 1 (LE)

No. 54-04.....Interior Latex, Semi-Gloss, MPI Gloss Level 5
(LE)

No. 59-04.....Interior/Exterior Alkyd Porch & Floor Enamel,
Low Gloss (FE)

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No. 60-04.....Interior/Exterior Latex Porch & Floor Paint, Low
Gloss

No. 66-04.....Interior Alkyd Fire Retardant, Clear Top-Coat
(ULC Approved) (FC)

No. 67-04.....Interior Latex Fire Retardant, Top-Coat (ULC
Approved) (FR)

No. 68-04.....Interior/ Exterior Latex Porch & Floor Paint,
Gloss

No. 71-04.....Polyurethane, Moisture Cured, Clear, Flat (PV)

No. 74-04.....Interior Alkyd Varnish, Semi-Gloss

No. 77-04.....Epoxy Cold Cured, Gloss (EC)

No. 79-04.....Marine Alkyd Metal Primer

No. 90-04.....Interior Wood Stain, Semi-Transparent (WS)

No. 91-04.....Wood Filler Paste

No. 94-04.....Exterior Alkyd, Semi-Gloss (EO)

No. 95-04.....Fast Drying Metal Primer

No. 98-04.....High Build Epoxy Coating

No. 101-04.....Epoxy Anti-Corrosive Metal Primer

No. 108-04.....High Build Epoxy Coating, Low Gloss (EC)

No. 114-04.....Interior Latex, Gloss (LE) and (LG)

No. 119-04.....Exterior Latex, High Gloss (acrylic) (AE)

No. 135-04.....Non-Cementitious Galvanized Primer

No. 138-04.....Interior High Performance Latex, MPI Gloss Level
2 (LF)

No. 139-04.....Interior High Performance Latex, MPI Gloss Level
3 (LL)

No. 140-02.....Interior High Performance Latex, MPI Gloss Level
4

No. 141-04.....Interior High Performance Latex (SG) MPI Gloss
Level 5

H. Steel Structures Painting Council (SSPC):

SSPC SP 1-00.....Solvent Cleaning

SSPC SP 2-00.....Hand Tool Cleaning

SSPC SP 3-00.....Power Tool Cleaning

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Wood Sealer: MPI 31 (gloss) or MPI 71 (flat) thinned with thinner recommended by manufacturer at rate of about one part of thinner to four parts of varnish.
- B. Plastic Tape:
1. Pressure sensitive adhesive back.

2. Widths as shown.

- C. Aluminum Paint (AP): MPI 1.
- D. Interior/Exterior Latex Block Filler: MPI 4.
- E. Exterior Alkyd Wood Primer: MPI 5.
- F. Exterior Oil Wood Primer: MPI 7.
- G. Exterior Alkyd, Flat (EO): MPI 8.
- H. Exterior Alkyd Enamel (EO): MPI 9.
- I. Exterior Latex, Flat (AE): MPI 10.
- J. Exterior Latex, Semi-Gloss (AE): MPI 11.
- K. Organic Zinc rich Coating (HR): MPI 22.
- L. High Heat Resistant Coating (HR): MPI 22.
- M. Cementitious Galvanized Metal Primer: MPI 26.
- N. Exterior/ interior Alkyd Floor Enamel, Gloss (FE): MPI 27.
- O. Knot Sealer: MPI 36.
- P. Interior Satin Latex: MPI 43.
- Q. Interior Low Sheen Latex: MPI 44.
- R. Interior Primer Sealer: MPI 45.
- S. Interior Enamel Undercoat: MPI 47.
- T. Interior Alkyd, Semi-Gloss (AK): MPI 47.
- U. Interior Alkyd, Gloss (AK): MPI 49.
- V. Interior Latex Primer Sealer: MPI 50.
- W. Interior Alkyd, Eggshell: MPI 51
- X. Interior Latex, MPI Gloss Level 3 (LE): MPI 52.
- Y. Interior Latex, Flat, MPI Gloss Level 1 (LE): MPI 53.
- Z. Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE): MPI 54.
- AA. Interior / Exterior Alkyd Porch & Floor Enamel, Low Gloss (FE): MPI 59.
- BB. Interior/ Exterior Latex Porch & Floor Paint, Low Gloss: MPI 60.
- CC. Interior Alkyd Fire Retardant, Clear Top-Coat (ULC Approved) (FC): MPI 66.
- DD. Interior Latex Fire Retardant, Top-Coat (ULC Approved) (FR): MPI 67.
- EE. Interior/ Exterior Latex Porch & Floor Paint, gloss: MPI 68.
- FF. Epoxy Cold Cured, Gloss (EC): MPI 77.
- GG. Marine Alkyd Metal primer: MPI 79.
- HH. Interior Wood Stain, Semi-Transparent (WS): MPI 90.
- II. Wood Filler Paste: MPI 91.
- JJ. Exterior Alkyd, Semi-Gloss (EO): MPI 94.
- KK. Fast Drying Metal Primer: MPI 95.
- LL. High Build Epoxy Coating: MPI 98.
- MM. Epoxy Anti-Corrosive Metal Primer: MPI 101.
- NN. High Build Epoxy Marine Coating (EC): MPI 108.
- OO. Interior latex, Gloss (LE) and (LG): MPI 114.

- PP. Exterior Latex, High Gloss (acrylic) (AE): MPI 119.
- QQ. Waterborne Galvanized Primer: MPI 134.
- RR. Non-Cementitious Galvanized Primer: MPI 135.
- SS. Interior High Performance Latex, MPI Gloss Level 2(LF): MPI 138.
- TT. Interior High Performance Latex, MPI Gloss Level 3 (LL): MPI 139.
- UU. Interior High Performance Latex, MPI Gloss Level 4: MPI 140.
- VV. Interior High Performance 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

- 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 local, state or district requirements.
 - 2. Lead-Base Paint:
 - a. Comply with Section 410 of the Lead-Based Paint Poisoning Prevention Act, as amended, and with implementing regulations promulgated by Secretary of Housing and Urban Development.
 - b. Regulations concerning prohibition against use of lead-based paint in federal and federally assisted construction, or rehabilitation of residential structures are set forth in Subpart F, Title 24, Code of Federal Regulations, Department of Housing and Urban Development.
 - 3. Asbestos: Materials shall not contain asbestos.
 - 4. Chromate, Cadmium, Mercury, and Silica: Materials shall not contain zinc-chromate, strontium-chromate, Cadmium, mercury or mercury compounds or free crystalline silica.
 - 5. Human Carcinogens: Materials shall not contain any of the ACGIH-BKLT and ACGHI-DOC confirmed or suspected human carcinogens.
 - 6. Comply with the Regional Ozone Transport Commission (OTC) regulations regarding Volatile Organic Content (VOC).

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 Owner's Representative 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:

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. Wood:

1. Sand to a smooth even surface and then dust off.
2. Sand surfaces showing raised grain smooth between each coat.
3. Wipe surface with a tack rag prior to applying finish.
4. Surface painted with an opaque finish:
 - a. Coat knots, sap and pitch streaks with MPI 36 (Knot Sealer) before applying paint.
 - b. Apply two coats of MPI 36 (Knot Sealer) over large knots.
5. After application of prime or first coat of stain, fill cracks, nail and screw holes, depressions and similar defects with wood filler paste. Sand the surface to make smooth and finish flush with adjacent surface.
6. Before applying finish coat, reapply wood filler paste if required, and sand surface to remove surface blemishes. Finish flush with adjacent surfaces.
7. Fill open grained wood such as oak, walnut, ash and mahogany with MPI 91 (Wood Filler Paste), colored to match wood color.
 - a. Thin filler in accordance with manufacturer's instructions for application.
 - b. Remove excess filler, wipe as clean as possible, dry, and sand as specified.

D. Ferrous Metals:

1. Remove oil, grease, soil, drawing and cutting compounds, flux and other detrimental foreign matter in accordance with SSPC-SP 1 (Solvent Cleaning).
2. Remove loose mill scale, rust, and paint, by hand or power tool cleaning, as defined in SSPC-SP 2 (Hand Tool Cleaning) and SSPC-SP 3 (Power Tool Cleaning). Exception: where high temperature aluminum paint is used, prepare surface in accordance with paint manufacturer's instructions.
3. Fill dents, holes and similar voids and depressions in flat exposed surfaces of hollow steel doors and frames, access panels, roll-up steel doors and similar items specified to have semi-gloss or gloss finish with TT-F-322D (Filler, Two-Component Type, For Dents, Small Holes and Blow-Holes). Finish flush with adjacent surfaces.
 - a. This includes flat head countersunk screws used for permanent anchors.
 - b. Do not fill screws of item intended for removal such as glazing beads.

4. Spot prime abraded and damaged areas in shop prime coat which expose bare metal with same type of paint used for prime coat. Feather edge of spot prime to produce smooth finish coat.
 5. Spot prime abraded and damaged areas which expose bare metal of factory finished items with paint as recommended by manufacturer of item.
- E. Zinc-Coated (Galvanized) Metal, Aluminum, Copper and Copper Alloys
Surfaces Specified Painted:
1. Clean surfaces to remove grease, oil and other deterrents to paint adhesion in accordance with SSPC-SP 1 (Solvent Cleaning).
 2. Spot coat abraded and damaged areas of zinc-coating which expose base metal on hot-dip zinc-coated items with MPI 18 (Organic Zinc Rich Coating). Prime or spot prime with MPI 134 (Waterborne Galvanized Primer) or MPI 135 (Non- Cementitious Galvanized Primer) depending on finish coat compatibility.
- F. 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 [Plaster, 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 Resident Engineer.
- 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 Owner's Representative, 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 not to be painted.
- I. 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. Wood and Wood Particleboard:
 - 1. Use same kind of primer specified for exposed face surface.
 - a. Exterior wood: MPI 7 (Exterior Oil Wood Primer) for new construction.
 - b. Interior wood except for transparent finish: MPI 45 (Interior Primer Sealer) or MPI 46 (Interior Enamel Undercoat), thinned if recommended by manufacturer.
 - c. Transparent finishes as specified under Transparent Finishes on Wood except Floors.
 - 2. Apply one coat of primer MPI 7 (Exterior Oil Wood Primer) or MPI 5 (Exterior Alkyd Wood Primer) or sealer MPI 45 (Interior Primer Sealer) or MPI 46 (Interior Enamel Undercoat) as soon as delivered to

- site to surfaces of unfinished woodwork, except concealed surfaces of shop fabricated or assembled millwork and surfaces specified to have varnish, stain or natural finish.
3. Back prime and seal ends of exterior woodwork, and edges of exterior plywood specified to be finished.
- E. Metals except boilers, incinerator stacks, and engine exhaust pipes:
1. Steel and iron: MPI 79 (Marine Alkyd Metal Primer) MPI 95 (Fast Drying Metal Primer). Use MPI 101 (Cold Curing Epoxy Primer) where MPI 77 (Epoxy Cold Cured, Gloss (EC)) finish is specified.
 2. Zinc-coated steel and iron: MPI 134 (Waterborne Galvanized Primer) MPI 135 (Non-Cementitious Galvanized Primer).
 3. Aluminum scheduled to be painted: MPI 95 (Fast Drying Metal Primer).
 4. Terne Metal: MPI 79 (Marine Alkyd Metal Primer) MPI 95 (Fast Drying Metal Primer).
 5. Copper and copper alloys scheduled to be painted: MPI 95 (Fast Drying Metal Primer).
 6. Machinery not factory finished: MPI 9 (Exterior Alkyd Enamel (EO)).
 7. Asphalt coated metal: MPI 1 (Aluminum Paint (AP)).
- F. Gypsum Board:
1. Surfaces scheduled to have MPI 10 (Exterior Latex, Flat (AE)) MPI 11 (Exterior Latex, Semi-Gloss (AE)) MPI 119 (Exterior Latex, High Gloss (acrylic) (AE)) or MPI 53 (Interior Latex, Flat), MPI Gloss Level 1 (LE)) MPI 52 (Interior Latex, MPI Gloss Level 3 (LE)) MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)) MPI 114 (Interior Latex, Gloss (LE) and (LG)) finish: Use MPI 10 (Exterior Latex, Flat (AE)) MPI 11 (Exterior Latex, Semi-Gloss (AE)) MPI 119 (Exterior Latex, High Gloss (acrylic)(AE)) or MPI 53 (Interior Latex, MPI Gloss Level 3 (LE)) MPI 52 (Interior Latex, MPI Gloss Level 3 (LE)) MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)) MPI 114 (Interior Latex, Gloss (LE) and (LG)) respectively.
 2. Primer: MPI 50 (Interior Latex Primer Sealer) except use MPI 45 (Interior Primer Sealer) MPI 46 (Interior Enamel Undercoat) in bathrooms.

3.6 EXTERIOR FINISHES

- A. Apply finish coats as follows:
- B. Wood:
1. Do not apply finish coats on surfaces concealed after installation.
 2. Two coats of MPI 10 Exterior Latex, Flat (AE)) MPI 11 (Exterior Latex, Semi-Gloss (AE)) MPI 119 (Exterior Latex, High Gloss (acrylic) (AE)) on exposed surfaces, except where transparent finish is specified.

3. Two coats of MPI 31 (Polyurethane, Moisture Cured, Clear Gloss (PV)) MPI 71 (Polyurethane, Moisture Cured, Clear Flat (PV)) for transparent finish.

C. Steel and Ferrous Metal:

1. Two coats of MPI 8 (Exterior Alkyd, Flat (EO)) MPI 9 (Exterior Alkyd Enamel (EO)) MPI 94 (Exterior Alkyd, Semi-Gloss (EO)) on exposed surfaces, except on surfaces over 94 degrees C (200 degrees F).

3.7 INTERIOR FINISHES

A. Apply finish coats over prime coats as follows:

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. Apply two coats of MPI 47 (Interior Alkyd, Semi-Gloss (AK)) unless specified otherwise.
 - b. Two coats of MPI 48 (Interior Alkyd Gloss (AK)) MPI 51 (Interior Alkyd, Eggshell (AK)).
 - c. Machinery: One coat MPI 9 (Exterior Alkyd Enamel (EO)).
 - d. Asphalt Coated Metal: One coat MPI 1 (Aluminum Paint (AP)).

C. Gypsum Board:

1. One coat of MPI 45 (Interior Primer Sealer) MPI 46 (Interior Enamel Undercoat) plus one coat of MPI 139 (Interior High Performance Latex, MPI Gloss level 3 (LL)).
2. One coat of MPI 45 (Interior Primer Sealer) MPI 46 (Interior Enamel Undercoat) plus one coat of MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)) or MPI 114 (Interior Latex, Gloss (LE) and (LG)).
3. One coat of MPI 45 (Interior Primer Sealer) MPI 46 (Interior Enamel Undercoat) plus one coat of MPI 48 (Interior Alkyd Gloss (AK)).

D. Wood:

1. Sanding:

- a. Use 220-grit sandpaper.
- b. Sand sealers and varnish between coats.
- c. Sand enough to scarify surface to assure good adhesion of subsequent coats, to level roughly applied sealer and varnish, and to knock off "whiskers" of any raised grain as well as dust particles.

2. Sealers:

- a. Apply sealers specified except sealer may be omitted where pigmented, penetrating, or wiping stains containing resins are used.

- b. Allow manufacturer's recommended drying time before sanding, but not less than 24 hours or 36 hours in damp or muggy weather.
- c. Sand as specified.
- 3. Paint Finish:
 - a. One coat of MPI 45 (Interior Primer Sealer) MPI 46 (Interior Enamel Undercoat) plus one coat of MPI 47 (Interior Alkyd, Semi-Gloss (AK)) (SG).
 - b. Two coats of MPI 51 (Interior Alkyd, Eggshell) (AK)).
- 4. Transparent Finishes on Wood Except Floors.
 - a. Natural Finish:
 - 1) One coat of sealer as written in 2.1 E.
 - 2) Two coats of MPI 71 (Polyurethane, Moisture Cured, Clear Flat (PV) MPI 31 (Polyurethane, Moisture Cured, Clear Gloss (PV)).
 - b. Stain Finish:
 - 1) One coat of MPI 90 (Interior Wood Stain, Semi-Transparent (WS)).
 - 2) Use wood stain of type and color required to achieve finish specified. Do not use varnish type stains.
 - 3) One coat of sealer as written in 2.1 E.
 - 4) Two coats of MPI 71 (Polyurethane, Moisture Cured, Clear Flat (PV) MPI 31 (Polyurethane Moisture Cured, Clear Gloss (PV)).
 - c. Varnish Finish:
 - 1) One coat of sealer as written in 2.1 E.
 - 2) Two coats of MPI 71 (Polyurethane, Moisture Cured, Clear Flat (PV) MPI 31 (Polyurethane Moisture Cured, Clear Gloss (PV)).

3.8 PAINT COLOR

- A. Color and gloss of finish coats is specified on the drawings.
- 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.

3.10 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.
- C. Paint after tests have been completed.
- D. Omit prime coat from factory prime-coated items.

- E. 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.
- F. Omit field painting of items specified in paragraph, Building and Structural WORK NOT PAINTED.
- G. Color:
 - 1. Paint items having no color specified to match surrounding surfaces.
- H. Apply paint systems on properly prepared and primed surface as follows:
 - 1. Exterior Locations:
 - a. Apply two coats of MPI 8 (Exterior Alkyd, Flat (EO)) MPI 94 (Exterior Alkyd, Semi-gloss (EO)) MPI 9 (Exterior Alkyd Enamel (EO)) to the following ferrous metal items:
Vent and exhaust pipes with temperatures under 94 degrees C (200 degrees F), roof drains, fire hydrants, post indicators, yard hydrants, exposed piping and similar items.
 - b. Apply two coats of MPI 10 (Exterior Latex, Flat (AE)) MPI 11 (Exterior Latex, Semi Gloss (AE)) MPI 119 (Exterior Latex, High Gloss (acrylic) (AE)) to the following metal items:
Galvanized and zinc-copper alloy metal.
 - 2. 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.
 - 3) Heating, ventilating, air conditioning, plumbing equipment, and machinery having shop prime coat and not factory finished.

3.11 BUILDING AND STRUCTURAL WORK FIELD PAINTING

- A. Painting and finishing of interior and exterior work except as specified under paragraph 3.11 B.
 - 1. Painting of ferrous metal and galvanized metal.
- B. Building and Structural Work not Painted:
 - 1. Prefinished items:
 - a. Casework, doors, metal panels, wall covering, and similar items specified factory finished under other sections.
 - b. Factory finished equipment.
 - 2. Finished surfaces:

- a. Hardware except ferrous metal.
 - b. Anodized aluminum, stainless steel, chromium plating, copper, and brass, except as otherwise specified.
 - c. Signs, fixtures, and other similar items integrally finished.
 - 3. Concealed surfaces:
 - a. Inside interstitial spaces, pipe basements, crawl spaces and above ceilings, except as otherwise specified.
 - b. Inside walls or other spaces behind access doors or panels.
 - c. Surfaces concealed behind permanently installed casework and equipment.
 - 4. Labels:
 - a. Code required label, such as Underwriters Laboratories Inc., Inchcape Testing Services, Inc., or Factory Mutual Research Corporation.
 - b. Identification plates, instruction plates, performance rating, and nomenclature.
 - 5. Galvanized metal:
 - a. Except where specifically specified to be painted.
 - 6. Gaskets.
 - 7. Concrete curbs, gutters, pavements, retaining walls, exterior exposed foundations walls.
 - 10. Structural steel encased in concrete, masonry, or other enclosure.
 - 11. Ceilings, walls, columns in interstitial spaces.
 - 12. Ceilings, walls, and columns in pipe basements.
- 3.12 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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