

**SECTION 09 91 00
PAINTING**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section specifies application of prime coat and finish coats applied to existing exterior and interior surfaces.

1.2 RELATED WORK

- A. General Requirements, Section 01010.

1.3 SUBMITTALS

- A. Submit Manufacturer's Literature and Data:
Before work is started, submit manufacturer's literature, indicating brand names, product type, color, gloss level, coating composition, Federal Specification Number or manufacturers name or product number where applicable, and certificates as 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. Store materials at site at least 24 hours before using, at a temperature between 18 and 30 °K (65 and 85 °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):
ACGIH TLV-BKLT-2009...Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs)
ACGIH TLV-DOC (Seventh Edition)...Documentation of Threshold Limit Values and Biological Exposure Indices.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Exterior Alkyd Wood Primer: MPI 5.
- B. Exterior Oil Wood Primer: MPI 7.
- C. Exterior Alkyd, Flat (EO): MPI 8.
- D. Exterior Alkyd Enamel (EO): MPI 9.
- E. Interior Primer Sealer: MPI 45.
- F. Interior Enamel Undercoat: MPI 46.
- G. Interior Latex Primer Sealer: MPI 50.
- H. Interior Alkyd, Eggshell: MPI 51
- I. Interior Latex, MPI Gloss Level 3 (LE): MPI 52.
- J. Interior Latex, Flat, MPI Gloss Level 1 (LE): MPI 53.
- K. Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE): MPI 54.
- L. Exterior Alkyd, Semi-Gloss (EO): MPI 94.
- M. Fast Drying Metal Primer: MPI 95.
- N. Interior latex, Gloss (LE) and (LG): MPI 114

2.2 PAINT PROPERTIES

- A. Use ready-mixed (including colors).

2.3 REGULATORY REQUIREMENTS

A. Paint materials must conform to the restrictions of the local Environmental and Toxic Control jurisdiction or the requirements of this section, whichever is most stringent.

1. Lead-Based Paint:

- a. Lead based paint is not permitted to be used.

2. Asbestos: Materials must not contain asbestos.

3. Chromate, Cadmium, Mercury, and Silica: Materials must not contain zinc-chromate, strontium-chromate, Cadmium, mercury or mercury compounds or free crystalline silica.

4. Human Carcinogens: Materials must not contain any of the ACGIH-BKLT and ACGHI-DOC confirmed or suspected human carcinogens.

5. Use high performance acrylic paints in place of alkyd paints, where possible.

6. VOC content for solvent-based paints must not exceed specified performance requirement; aromatic hydro carbons contained in solvent-based paints must not exceed one percent 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 day's 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.
2. Do not exceed application conditions recommended by the manufacturer.
3. Maintain interior temperatures until paint dries hard.
4. Do no exterior painting when it is windy and dusty.
5. Do not paint in direct sunlight or on surfaces that the sun will soon warm.
6. 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 prefabricated 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. 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 Knot Sealer before applying paint.
 - b. Apply two coats of 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 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. Masonry, Concrete, Cement Board, Cement Plaster and Stucco:

1. Clean and remove dust, dirt, oil, grease efflorescence, form release agents, laitance, and other deterrents to paint adhesion.
2. Use emulsion type cleaning agents to remove oil, grease, paint and similar products. Use of solvents, acid, or steam is not permitted.
3. Remove loose mortar in masonry work.
4. Replace mortar and fill open joints, holes, cracks and depressions with new mortar. Do not fill weep holes. Finish to match adjacent surfaces.
5. Neutralize Concrete floors to be painted by washing with a solution of 1.4 Kg (3 pounds) of zinc sulfate crystals to 3.8 L (1 gallon) of water, allow to dry three days and brush thoroughly free of crystals.
6. Repair broken and spalled concrete edges with concrete patching compound to match adjacent surfaces as specified in CONCRETE Sections. Remove projections to level of adjacent surface by grinding or similar methods.

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

3.4 APPLICATION

- A. Unless otherwise specified, apply paint in three coats; prime, body, and finish.
- B. Apply each coat evenly and cover substrate completely.
- C. Allow not less than 48 hours between applications of succeeding coats, except as allowed by manufacturer's printed instructions, and approved by COTR.

D. Finish surfaces to show solid even color, free from runs, lumps, brush marks, laps, holidays, or other defects.

E. Apply by brush or roller. Spray application is not allowed.

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. 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 and MPI 5 (Exterior Alkyd Wood Primer) for repainting bare wood primer except where Interior Wood Stain, Semi-Transparent (WS) is scheduled.

b. Interior wood except for transparent finish: MPI 45 (Interior Primer Sealer) or MPI 46 (Interior Enamel Undercoat), thinned if recommended by manufacturer.

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.

F. Metals:

1. Steel and Iron: MPI 95 (Fast Drying Metal Primer).

G. Concrete Masonry Units except glazed or integrally colored and decorative units:

1. MPI 4 (Block Filler) on interior surfaces.

3.6 EXTERIOR FINISHES

A. Steel and Ferrous Metal:

1. Two coats of MPI 8 (Exterior Alkyd, Flat (EO)) or MPI 9 (Exterior Alkyd Enamel (EO)) or 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. Masonry and Concrete Walls:

1. Over MPI 4 (Interior/Exterior Latex Block Filler) on CMU surfaces.
2. Two coats of MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)).

B. Gypsum Board:

1. One coat of MPI 45 (Interior Primer Sealer) plus one coat of MPI 139 (Interior High Performance Latex, MPI Gloss level 3 (LL)).
2. Two coats of MPI 138 (Interior High Performance Latex, MPI Gloss Level 2 (LF)).

C. 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.
- b. Two coats of MPI 51 (Interior Alkyd, Eggshell) (AK)).

3.8 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. Refinish areas as specified for new work to match adjoining work unless specified or scheduled otherwise.
 - G. Coat knots and pitch streaks showing through old finish with Knot Sealer before refinishing.
 - H. Sand or dull glossy surfaces prior to painting.
 - I. Sand existing coatings to a feather edge so that transition between new and existing finish will not show in finished work.
- 3.9 PAINT COLOR
- A. Submit color samples to COTR for approval prior to start of work.
- 3.10 PROTECTION CLEAN UP AND TOUCH-UP
- A. Protect ground surface and other areas from paint droppings and spattering by use of masking, drop cloths, and removal of items or by other approved methods.
 - B. Upon completion, clean paint from hardware, other surfaces and items not required to be painted of paint drops or smears.
 - C. Before final inspection, touch-up or refinish as needed to produce solid even color and finish surface texture, free from runs, drips, and defects in workmanship.

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