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. Shop prime painting of steel and ferrous metals: Division 09 – FINISHES, Division 13 – SPECIAL CONSTRUCTION, Division 23 – HEATING, VENTILATION AND AIR-CONDITIONING, and Division 26 – ELECTRICAL.

B. Type of Finish, Color, and Gloss Level of Finish Coat: See 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. Panel to show transparent finishes: Wood of same species and grain pattern as wood approved for use, 100 by 250 by 3 mm (4 inch by 10 inch face by 1/4 inch) thick minimum, and where both flat and edge grain will be exposed, 250 mm (10 inches) long by sufficient size, 50 by 50 mm (2 by 2 inch) minimum or actual wood member to show complete finish.
4. Attach labels to panel stating the following:
   a. Federal Specification Number or manufacturers name and product number of paints used.
   b. Specification code number specified in Drawings.

c. Product type and color.
d. 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. 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):

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. State of California:

Proposition 65 ..... Safe Drinking Water and Toxic Enforcement Act of 1986

D. South Coast Air Quality Management District (SCAQMD):

Regulation XI, Source Specific Standards:

Rule 1113 ..... Architectural Coatings

E. American National Standards Institute (ANSI):

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

F Master Painters Institute (MPI):

No. 43……...Zero VOC Latex Semi-Gloss

No. 44……...Interior Latex Egg-Shell

No. 50-07……..Interior Latex Primer Sealer

No. 54-07……..Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)

No.107-07.....Universal Primer

No.143……..Institutional Low Odor/VOC, Latex Interior Flat

No.144……..Institutional Low Odor/VOC, Latex Interior Low Sheen

No.145……..Institutional Low Odor/VOC, Latex Interior Egg Shell

No.147……..Institutional Low Odor/VOC, Latex Interior Semi-Gloss

No.149……..Institutional Low Odor/VOC, Primer/Sealer

No. 154 & 164……Zero VOC Acrylic Semi-Gloss

G. Steel Structures Painting Council (SSPC):

SSPC SP 1-00 (R2004).....Solvent Cleaning

SSPC SP 2-00 (R2004).....Hand Tool Cleaning

SSPC SP 3-00 (R2004).....Power Tool Cleaning

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in other Part 2 articles for the paint category indicated.

B. Basis of Design: Products of The Sherwin-Williams Company, 2200 W. Orangewood Avenue, Suite 235, Orange, CA 92868. Contact: Penny Balogh; Phone (310) 999-9396; Email: penny.m.balogh@sherwin.com.

1. Products of other manufacturers satisfying the requirements of this specification shall also be acceptable.

2.2 MATERIALS

A. Interior Latex Primer Sealer: MPI 50: SW ProGreen 200 Low VOC Interior Latex Primer B28W0060

B. Interior Latex, MPI Gloss Level 3 (LE): MPI 52: SW ProMar 200 Zero VOC Interior Latex Eggshell, B20-2600 Series.

C. Interior Latex, Flat, MPI Gloss Level 1 (LE): MPI 53: SW ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series.

D. Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE): MPI 54: SW ProGreen 200 Low VOC Interior Latex Semi-Gloss B31W00651

E. Universal Primer: MPI 107: SW ProIndustrial ProCryl Universal Primer Low VOC B66-310 Series

F. Latex, Interior, Institutional Low Odor/VOC, MPI Gloss Level 1: MPI 143: SW ProMar 200 Zero VOC Interior Latex Flat B30-2600 Series.

G. Latex, Interior, Institutional Low Odor/VOC, MPI Gloss Level 2: MPI 144: SW ProMar 200 Zero VOC Interior Latex Lo Sheen B24-2600 Series.

H. Latex, Interior, Institutional Low Odor/VOC, MPI Gloss Level 3: MPI 145: SW ProMar 200 Zero VOC Interior Latex Eg-Shel, 20-2600 Series

I. Latex, Interior, Institutional Low Odor/VOC, MPI Gloss Level 5: MPI 147: SW ProIndustrial Zero VOC Acrylic Semi Gloss B66W00651 OR Harmony® Interior Latex Semi-Gloss, B10W951

J. Primer Sealer, Interior, Institutional Low Odor/VOC: MPI 149: SW Harmony® Interior Latex Primer, B11W900.

K. Zero VOC Acrylic Semi-Gloss: MPI 154 & 164: SW ProIndustrial Zero Acrylic Gloss, B66W611

L. Acrylic Clear Topcoat: SW Sher-crete, A10T0013 (glossy) or A10T00110 (low luster)

M. Waterbased Urethane Floor Enamel: SW Armorseal 1K, B65C775

N. Concrete Degreaser: H&C Degreaser

O. Concrete Etching Solution: H&C Concrete Etching Solution

2.3 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.

2.4 REGULATORY REQUIREMENTS/QUALITY ASSURANCE

A. All paints and coating materials shall comply with DHS requirements as stated herein or conform to the restrictions of the local Environmental and Toxic Control jurisdiction (SCAQMD Rule 1113 for Architectural Coatings), whichever is more restrictive.

1. Volatile Organic Compounds (VOC):
   a. VOC content of paint materials shall not exceed 200 g/l for primers, sealers, and undercoaters or quick-dry primers, sealers, and undercoaters.
   b. VOC content for General Coatings (Flat Coatings, Nonflat Coatings, and Nonflat Coatings – High Gloss), shall not exceed 100 g/l, 150 g/l, and 250 g/l respectively, and shall not be formulated with more than one percent aromatic hydrocarbons by weight.
2. Asbestos: Materials shall not contain asbestos.
3. Chromate, Cadmium, Mercury, and Silica: Materials shall not contain zinc-chromate, strontium-chromate, cadmium, mercury or mercury compounds or free crystalline silica.
4. Human Carcinogens: Materials shall not contain any of the ACGIH-BKLT and ACGHI-DOC confirmed or suspected human carcinogens. Comply with California Proposition 65 requirements.

5. Use high-performance acrylic paints in place of alkyd paints, where possible. Use of alkyd paint shall not be allowed.

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. 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. 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.

D Zinc-Coated (Galvanized) Metal, Aluminum, 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 107 Pro Industrial Pro-Cryl Universal Primer, B66W310 NOTE: Pro Cryl is not a zinc rich primer, but it is a Flash rust/early rust resistant primer. No zinc rich primer is available that's compliant in SDAPCD. Prime or spot prime with MPI 107 Pro Industrial Pro-Cryl Universal Primer, B66W310.

E. 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 Project 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 Project Engineer, 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 sterilizers 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.
D. Metals except boilers, incinerator stacks, and engine exhaust pipes:
    1. Steel and iron: No. 107-07 (Universal Primer).

2. Zinc-coated steel and iron: MPI 107 Pro Industrial Pro-Cryl Universal Primer, B66W310.
3. Machinery not factory finished: MPI 107 Pro Industrial Pro-Cryl Universal Primer, B66W310.

E. Concrete Floor Slab; Interior Surface of Floors: See INTERIOR FINISHES, Concrete Floors.

F. Gypsum Board; Interior Surfaces of Walls:
1. Surfaces scheduled to have MPI 53 (Interior Latex, Flat), MPI Gloss Level 1 LE), MPI 52 (Interior Latex, MPI Gloss Level 3 (LE), and MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE), finish: Use MPI 50 (Interior Latex Primer Sealer).

3.6 INTERIOR FINISHES

A. Apply following finish coats over prime coats in spaces or on surfaces specified in 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. Apply two coats of MPI 43 ProMar 200 Zero VOC Latex Semi-Gloss, B31-2651 Series, or MPI 154 & 164 Pro Industrial Zero VOC Acrylic Semi-Gloss, B66W650.
b. Two coats of MPI 44 ProGreen® 200 Int Ltx Eg-Shel, B20W651/ B20WQ8651MPI, or 154 & 164 Pro Industrial Zero VOC Acrylic Eg-Shel, B66W660.
c. Machinery: One coat MPI 154 & 164 Pro Industrial Zero VOC Acrylic Gloss, B66W600 Series.

C. Concrete Floors:
1. All concrete surfaces must be clean, dry, and free of grease, oil, paint, sealers, etc.
2. Apply Sher-Crete Acrylic Clear Topcoat or Armorseal 1K Waterbased Urethane Floor Enamel per manufacturer’s requirements:
a. Sher-Crete: Degrease concrete if required using H&C Degreaser; Etch concrete surface using H&C Concrete Etching Solution; apply two coats Sher-Crete Acrylic Clear Topcoat.
b. Armorseal 1K: Apply three coats; first coat reduced 10%.

D. Gypsum Board:
1. Two coats of MPI 53 (Interior Latex, Flat), MPI Gloss Level 1 LE), MPI 52 (Interior Latex, MPI Gloss Level 3 (LE), or MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE), as indicated in Drawings.

E. Miscellaneous:
   1. Apply where specified in Drawings.

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. Refinish areas as specified for new work to match adjoining work unless specified or scheduled otherwise.
G. Sand or dull glossy surfaces prior to painting.
H. 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 is specified in Drawings.
B. For additional requirements regarding color see Article, REFINISHING EXISTING PAINTED SURFACES.
C. 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.

3.9 BUILDING AND STRUCTURAL WORK FIELD PAINTING

A. Painting and Finishing of Interior:
   1. Painting and finishing of new and existing work including colors and gloss of finish selected is indicated in Drawings.
   2. Painting of disturbed, damaged and repaired or patched surfaces when entire space is not scheduled for complete repainting or refinishing.
   3. Painting of ferrous metal and galvanized metal.
B. Building and Structural Work not Painted:
   1. Prefinished items:
      a. Casework, doors, elevator entrances and cabs, metal panels, wall covering, and similar items specified factory finished under other sections.

b. Factory finished equipment and pre-engineered metal building components such as metal roof and wall panels.

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 dumbwaiter, elevator and duct shafts, interstitial spaces, pipe basements, crawl spaces, pipe tunnels, above ceilings, attics, except as otherwise specified.
   b. Inside walls or other spaces behind access doors or panels.
   c. Surfaces concealed behind permanently installed casework and equipment.
5. Labels:
   a. Code required labels, such as but limited to: Underwriters Laboratories Inc., Inchcape Testing Services, Inc., Factory Mutual Research Corporation, et al.
   b. Identification plates, instruction plates, performance rating, and nomenclature.

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.

3.11 INDOOR AIR QUALITY

A. Wear protective clothing and respirators when applying oil-based paints or using spray equipment with any paints.
B. Maximize ventilation during application and drying.
C. Isolate area of application from rest of building.
D. Vacate space for as long as possible after application. Wait a minimum of 48 hours before occupying freshly painted rooms.

3.12 WASTE MANAGEMENT

A. Separate waste in accordance with the Waste Management Plan. Set aside extra paint for future color matches, or reuse by Owner, Habitat for Humanity, etc. Where local options exist for leftover paint recycling, collect all waste paint by type and provide for delivery to recycling or collection facility.
B. Close and tightly seal all partly used paint and finish containers and store protected in well-ventilated, fire-safe area at moderate temperature.

C. Place empty containers of solvent-based paints in areas designated for hazardous materials.

D. Do not dispose of paints or solvents by pouring on the ground or down drains. Place in designated containers for proper disposal.

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