SECTION 09900

PAINTS AND COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints, oils, sealers and other coatings.

C. Surfaces to be finished are indicated in this section and on the Drawings.

1.02 RELATED REQUIREMENTS

A. Section 05500 - Metal Fabrications: Shop-primed items.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.

B. GreenSeal GS-11 - Architectural Paints.

C. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Master Painters and Decorators Association.

1.04 SUBMITTALS

A. See Section 01350 - Submittals, for submittal procedures.

B. Product Data: Provide complete list of all products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system (copy of relevant MPI Manual page is acceptable).
   4. Manufacturer's installation instructions.
   5. If proposal of substitutions is allowed under submittal procedures, explanation of all substitutions proposed.

C. Certification by manufacturer that products comply with Contract Documents and are compatible with applicable substrates and with each other.

D. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.

E. Certification: By manufacturer that all paints and coatings do not contain any of the prohibited chemicals specified; GreenSeal GS-11 certification is not required but if provided shall constitute acceptable certification.

F. Samples: Submit three paper "drop" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.
   2. Where sheen is not specified, submit each color in each sheen available.
   3. Where sheen is not specified, discuss sheen options with Alexander + Hibbs AIA, Inc. before preparing samples, to eliminate sheens definitely not required.

G. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.05 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

B. Maintain one copy of relevant portions of MPI Architectural Painting Specification Manual on project site at all times.

C. Material Safety Data Sheets: At project site maintain file of MSDS sheets for each product used; become familiar with and follow manufacturer's stated application and safety requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.08 EXTRA MATERIALS

A. Supply 1 gallon of each color, type, and surface texture; store where directed.

B. Label each container with color, type, texture, and room locations in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Paints and Coatings: Any manufacturer listed in MPI Approved Products List (at www.paintinfo.com) under applicable MPI product reference number, unless otherwise indicated.

B. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

C. Provide all paint and coating products from the same manufacturer to the greatest extent possible.

D. In the event that a single manufacturer cannot provide all specified products, minor exceptions will be permitted provided approval by Alexander + Hibbs AIA, Inc. is obtained using the specified procedures for substitutions.
   1. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.
   2. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.

3. Substitution of a different system using MPI-approved products by the same manufacturer will be considered.

E. Paints:
1. Dunn Edwards is specified as a basis for standards unless otherwise noted..
2. Substitutions: See Section 01640 - Substitutions and Product Options.

2.02 MATERIALS - GENERAL

A. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the most stringent requirements specified in the following:
   a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
   b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
      1) Opaque, Flat: 50 g/L, maximum.
      2) Opaque, Nonflat: 150 g/L, maximum.
      3) Opaque, High Gloss: 250 g/L, maximum.
      4) Varnishes: 350 g/L, maximum.
   c. Architectural coatings VOC limits of state in which the project is located.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

B. Chemical Content: The following compounds are prohibited:
1. Aromatic Compounds: In excess of 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
2. Acrolein, acrylonitrile, antimony, benzene, butyl benzyl phthalate, cadmium, di (2-ethylhexyl) phthalate, di-n-butyl phthalate, di-n-octyl phthalate, 1,2-dichlorobenzene, diethyl phthalate., dimethyl phthalate, ethylbenzene, formaldehyde, hexavalent chromium, isophorone, lead, mercury, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, naphthalene, toluene (methylbenzene), 1,1,1-trichloroethane, vinyl chloride.
3. Ethylene Glycol.

C. Paints and Coatings: Provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI Categories, except as otherwise indicated.
1. Provide ready mixed paints and coatings.
2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

2.03 PAINT SYSTEMS - EXTERIOR

A. Ferrous Metals,Unprimed and Galvanized:
1. First Coat: GALV-ALUM Epoxy Galvanized/Aluminum Metal Primer (43-7).
2. Second Coat: SPARTASHELL Interior/Exterior Acrylic Eggshell Paint (W 7400V).
3. Third Coat: SPARTASHELL Interior/Exterior Acrylic Eggshell Paint (W 7400V).

B. Wood (IPE)
1. First Coat: Cabot Australian Timber Oil (3500 Series).

C. Concrete Block
1. First Coat: Concrete Block Filler, Low VOC, Smooth Block Filler (W6329).
2. Second Coat: Spartasheen, Interior/Exterior Low Sheen Paint W 7300).
3. Third Coat: Spartasheen, Interior/Exterior Low Sheen Paint (W 7300).

2.04 PAINT SYSTEMS - INTERIOR

A. Ferrous Metals, Unprimed and Galvanized:

1. First Coat: GALV-ALUM Epoxy Galvanized/Aluminum Metal Primer (43-7).
2. Second Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Acrylic Semi-Gloss Paint (W 603).
3. Third Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Acrylic Semi-Gloss Paint (W 603).

B. Gypsum Board:
1. First Coat: SPARTASHELL Interior/Exterior Acrylic Eggshell Paint (W 7400V).
2. Second Coat: SPARTASHELL Interior/Exterior Acrylic Eggshell Paint (W 7400V).

C. Gypsum Board:
1. First Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Latex Primer (W 600).
2. Second Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Acrylic Semi-Gloss Paint (W 603).
3. Third Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Semi-Gloss Paint (W 603).

D. Wood (Paint):
1. First Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Latex Primer (W 600).
2. Second Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Latex Flat Paint (W 601).
3. Third Coat: ECOSHIELD Low-Odor/Zero-VOC Interior Latex Flat Paint (W 601).

E. MDF Wood (Sealer):
1. First Coat: Cabot Quick-Dry Clear Satin Finish Sanding Sealer (8065); with light sanding.
2. Second Coat: Cabot Quick-Dry Clear Satin Finish Sanding Sealer (8065); with light sanding.

F. Concrete Block
1. First Coat: Concrete Block Filler (W 315).
2. Second Coat: Spartaglo, Interior/Exterior Acrylic Semi Gloss Paint (W 7500V).
3. Third Coat: Spartaglo, Interior/Exterior Acrylic Semi Gloss Paint (W 7500V).

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.

B. Patching Material: Acrylic filler.

C. Fastener Head Cover Material: Acrylic filler.

PART 3 EXECUTION

3.01 SCOPE -- SURFACES TO BE FINISHED

A. Paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.

B. Paint the surfaces described in PART 2, indicated on the Drawings, and as follows:
1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings, using primer only, prior to installation of the permanent item.
4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.
5. Finish top, bottom, and side edges of exterior doors the same as exposed faces.
6. Paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment occurring in finished areas to match background surfaces, unless otherwise indicated.
7. Paint shop-primed mechanical and electrical items occurring in finished areas.
8. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

C. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
   2. Items indicated to receive other finish.
   3. Items indicated to remain naturally finished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Anodized aluminum.
   6. Polished and brushed stainless steel items.
   7. Brick, precast concrete, integrally colored plaster.
   8. Concrete masonry in utility, mechanical, and electrical spaces.
   9. Polished and brushed stainless steel, anodized aluminum, bronze, terne, and lead.
   10. Acoustical materials.
   11. Concealed piping, ductwork, and conduit.
   12. Plywood backboards.

3.02 EXAMINATION

A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials; report incompatible primer conditions and submit recommended changes for Alexander + Hibbs AIA, Inc.'s approval.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Plaster and Gypsum Board: 12 percent.
   2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
   3. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.
   4. Exterior Wood: 15 percent, measured in accordance with ASTM D 4442.
   5. Concrete Floors: 8 percent.

E. Measure the ph factor of concrete, masonry, and mortar before starting any finishing process, using the method specified in MPI Architectural Painting Manual.
   1. Report results in writing to Alexander + Hibbs AIA, Inc. before starting work.
   2. If results of test indicates need for remedial action, provide written description of remedial action. If a different primer or paint systems is required, state the total cost of the change. Do not proceed with remedial action or change without receiving written authorization from Alexander + Hibbs AIA, Inc..

3.03 PREPARATION

A. Prepare surfaces as specified in MPI Architectural Painting Specification Manual and as follows for the applicable surface and coating; if multiple preparation treatments are specified, use as many as necessary for best results; where the Manual references external standards for preparation (e.g. SSPC standards), prepare as specified in those standards; comply with coating manufacturer's specific preparation methods or treatments, if any.

B. Coordinate painting work with cleaning and preparation work so that dust and other contaminants do not fall on newly painted, wet surfaces.

C. Surface Appurtenances: Prior to preparing surfaces or finishing, remove electrical plates, hardware, light fixtures, light fixture trim, escutcheons, machined surfaces, fittings, and similar items already installed that are not to be painted.
   1. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before preparation and finishing.
   2. After completing painting in each space or area, reinstall items removed using workers skilled in the trades involved.

D. Surfaces: Correct defects and clean surfaces which affect work of this section.

E. Marks: Seal with shellac those which may bleed through surface finishes.

F. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Concrete, Cement Plaster and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
   1. Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
   2. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
   3. Determine alkalinity and moisture content of surfaces by performing appropriate tests as specified in MPI Manual. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture is present.
   4. Etch concrete as specified in MPI Manual.

H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.

I. Asphalt, Creosote, or Bituminous Surfaces to be Painted: Remove foreign particles to permit adhesion of finishing materials. Apply latex based sealer or primer.

J. Insulated Coverings to be Painted: Remove dirt, grease, and oil from canvas and cotton.

K. Copper Surfaces to be Painted: Remove contamination by steam, high pressure water, or solvent washing. Apply vinyl etch primer immediately following cleaning.

L. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
   1. Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical or chemical methods as recommended as best practice by primer manufacturer.

M. Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
   1. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with the same primer as the shop coat.

N. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

O. Interior Wood Items to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

P. Interior Wood Items to Receive Transparent Finish: Sand wood to obtain a uniform appearance before immediately starting work. Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

Q. Exterior Wood to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.

R. Exterior Wood to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior calking compound after sealer has been applied. Prime concealed surfaces.

S. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.04 APPLICATION

A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.
   1. Provide completed work matching approved samples for color, texture, and coverage.
   2. Remove, refinish, or repaint work not complying with requirements.

B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.

C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.
   1. Brush Application: Use brushes best suited for the type of material applied; use brush of appropriate size for the surface or item being painted; produce results free of visible brush marks.
   2. Roller Application: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
   3. Spray Application: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
   4. Where application method is listed in the MPI Manual for the paint system that application method is required; otherwise any application method recommended by manufacturer for material used and objects to be painted is acceptable.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.
   1. Number of coats and film thickness required are the same regardless of application method.
   2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.
   3. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent to that of flat surfaces.

E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.
   1. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
   2. Before applying finish coats, apply a prime coat of material recommended by manufacturer, unless the surface has been prime coated by others; where evidence of suction spots or unsealed areas in first coat appear, recoat primed and sealed surfaces to ensure finish coat with no burn through or other defects due to insufficient sealing.
   3. Apply first coat to surface that has been cleaned, pretreated, or otherwise prepared as soon as practical after preparation and before subsequent surface deterioration.
   4. Do not apply succeeding coats until the previous coat has cured as recommended by

manufacturer.

5. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat will not cause the undercoat to lift or lose adhesion.
6. If manufacturer's instructions recommend sanding to produce a smooth, even surface, sand between coats.
7. Before applying next coat vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
8. Pigmented (Opaque) Finishes: Provide smooth, opaque surface of uniform finish, color, appearance, and coverage.
9. Stippled Finish: Roll and redistribute paint to even, fine texture; leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections; back roll final coat to achieve a uniform surface.

F. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

3.05 CLEANING AND PROTECTION

A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from site.

C. Protect other work, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting as approved by Alexander + Hibbs AIA, Inc..

D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in MPI Manual.

3.06 SCHEDULE - SURFACES TO BE FINISHED

A. Do not paint or finish the following items:
   1. Items fully factory-finished unless specifically noted.
   2. Fire rating labels, equipment serial number and capacity labels.
   3. Stainless steel items.

B. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
   1. Paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment occurring in finished areas to match background surfaces, unless otherwise indicated.
   2. Paint all equipment, including that which is factory-finished, exposed to weather or to view on the roof and outdoors.
   3. Paint shop-primed items occurring in finished areas.
   4. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
   5. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

C. Paint as indicated on drawings.

END OF SECTION