

SECTION 09900
PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES:

- A. Surface preparation and field application of paints and coatings.

1.2 REFERENCES

- A. ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.
- B. ASTM D2016 - Test Method for Moisture Content of Wood.
- C. NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.
- D. NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.
- E. Paint - Certified Product List - 12/95, Florida Department of Agriculture and Consumer Services.
- F. PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.
- G. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.
- H. Section 07900 – Joint Sealants.

1.3 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on all finishing products.
- C. Samples: Submit two 9" x 9" samples illustrating selected colors and textures for each type.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures, substrate conditions requiring special attention.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum five-years documented experience.
- B. Applicator: Company specializing in performing the work of this section with minimum five-years documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for finishes.

1.7 FIELD SAMPLES

- A. Provide a complete room field sample illustrating coating color, texture, and finish.
- B. Provide exterior field sample at an outside corner condition with finish extending minimum 10' both directions and selected height.

- C. Locate where directed by Architect and Owner.
- D. Accepted sample may remain as part of the work.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Follow manufacturer's requirements.
- C. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- D. Container label to 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.
- E. Store paint materials at minimum ambient temperature of 45° F and a maximum of 90° F, in ventilated area and as required by manufacturer's instructions.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Do not apply exterior coatings during rain or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- C. Minimum Application Temperatures for Latex Paints: 45° F for interiors 50° F for exterior unless required otherwise by manufacturer's instructions.
- D. Minimum Application Temperature for Varnish and Stain Finishes: 65° F for interior or exterior, unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 foot-candles measured mid-height at substrate surface.
- F. All grounds, windows, parking areas, etc. to be left clean of paint splattering and drippings. Plants, shrubbery and trees to be protected as much as possible. All property damage as a result of this work shall be restored or repaired at the Painting Contractors expense.
- G. Painting Contractor to comply with all safety and environmental regulations in effect at the time of installation. Painting Contractor to keep on site at all times and to provide additional copies of all Material Safety Data Sheets (MSDS's) to the Florida Tech Project Manager of all pertinent materials brought on site.
- H. Dispose of waste in accordance with applicable regulations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Coatings: Ready mixed, except field-catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating; good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
- C. Patching Materials: Latex filler.
- D. Caulkings – Refer to Section 07900 – Joint Sealants.

2.2 QUALITY STANDARDS

- A. All materials, preparation and workmanship shall conform to requirements of the latest edition of the Architectural Painting Specification Manual by the Master Painters Institute (MPI) (hereafter

referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.

2.3 FINISHES

- A. Refer to schedule at end of section for surface finish and color schedule.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of Section 01040.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. Test shop applied primer for compatibility with subsequent cover materials.
- E. 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 Wallboard: 12%.
 - 2. Masonry, Concrete, and Concrete Unit Masonry: 12%.
 - 3. Interior Wood: 15%, measured in accordance with ASTM D2016.
 - 4. Exterior Wood: 15%, measured in accordance with ASTM D2016.
 - 5. Concrete Floors: 8%.

3.2 PREPARATION

- A. Remove or mask electrical plates, hardware, light fixture trim, escutcheons and fittings prior to preparing surfaces or finishing.
- B. Correct defects and clean surfaces that affect work of this section. Remove existing coatings that exhibit loose surface defects.
- C. Seal any marks which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Surface to receive caulking shall be solvent brushed clean to remove dirt residue and to evaporate moisture. Exterior surfaces shall then be sealed with a continuous bead of 40 year sealant to insure a waterproof installation. Interior surfaces to be architecturally sealed with non-VOC emitting caulks.
- F. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high-pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- G. Asphalt, Creosote or Bituminous Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply compatible sealer or primer.
- H. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- I. Concrete Floors: Remove contamination acid etch and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- J. Copper Surfaces Scheduled for a Paint Finish: Remove contamination by steam, high-pressure water, or solvent washing. Apply vinyl etch primer immediately following cleaning.
- K. Copper Surfaces Scheduled for a Natural Oxidized Finish: Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid. Rub on repeatedly for required effect. Once attained, rinse surfaces with clear water and allow to dry.

- L. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- M. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- N. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: 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.
- O. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- P. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt and rust. Where heavy coatings of scale are evident, remove by power tool 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. Spot prime paint after repairs.
- Q. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime base steel surfaces.
- R. Interior Wood Items Scheduled to Receive 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.
- S. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand lightly between coats.
- T. Exterior Wood Scheduled to Receive Paint 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.
- U. Exterior Wood Scheduled 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.
- V. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.
- W. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

3.3 EXISTING SURFACE PREPARATION

- A. All exterior surfaces to be painted shall be thoroughly pressure cleaned to completely remove dirt, loose flaking paint and chalking oxidized paints/coatings. All mold and mildew will be chemically treated. Special care is to be taken to insure personal property is not damaged.
- B. All exterior ferrous metal to be painted shall be lightly sanded, wire brushed or ground with a grinder where needed. Metal to then be solvent wiped to remove any dust, dirt residue or greasy film. Metal to then be primed in a timely fashion to prevent rusting of bare metal surfaces.
- C. All surfaces to be caulked shall be raked out to remove loose, deteriorated material and non-compatible sealant. Surface shall then be solvent brushed to clean remaining dirt residue and to evaporate moisture. Exterior surfaces shall then be sealed with a continuous bead of 40 year sealant to insure a waterproof installation. Interior surfaces to be architecturally sealed with non-VOC emitting caulks.

3.4 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry.

- C. Apply each coat to uniform finish.
- D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- E. Sand wood and metal lightly between coats to achieve required finish.
- F. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
- G. Allow applied coat to dry before next coat is applied.
- H. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- I. Prime back surfaces of interior and exterior woodwork with primer paint.
- J. Prime concealed surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25% with mineral spirits.

3.5 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Refer to Division 15000 and Division 16000 for schedule of color-coding and identification banding of equipment, ductwork, piping, and conduit.
- B. Paint shop primed equipment.
- C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- D. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, in finished areas, except where items are pre-finished.
- E. 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. Paint dampers exposed behind louvers, grilles and to match face panels.
- F. Paint exposed conduit and electrical equipment occurring in finished areas.
- G. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
- H. Color code equipment, piping, conduit, and exposed ductwork in accordance with requirements indicated. Color band and identify with flow arrows, names, and numbering.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons and fittings removed prior to finishing.

3.6 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01400.

3.7 CLEANING

- A. Clean work under provisions of 01700.
- B. In addition to daily clean-up, Painting Contractor shall be responsible for proper storing of materials and equipment.
- C. Collect all waste material that may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.8 PAINT TYPE AND NUMBER OF COATS

- A. The following painting schedules are intended to identify the type of finishes which are required for the various surfaces, and to identify the surfaces to which each finish is to be applied. Refer to Room Finish Schedule.
- B. To define requirements for quality, function, size, gauges, grades, textures, and color, the following list of materials designates the manufacturer's brands, types, and number of coats

required and other requirements that are to be furnished to conform to the requirements of this Project.

- C. Where specific finishes are indicated by code designation, it shall specifically refer to the following identified types of coatings.
- D. The primer indicated under Material Identification is intended for the particular substrate surface specified. Where the same numbered finish is scheduled, but for another substrate, provide the proper primer compatible with substrate and the finish.
- E. Where the substrate has a compatible and satisfactory prime coat already on it, the prime coat specified for the numbered finish may be omitted. Test prime coat for compatibility before applying additional coats.

3.9 EXTERIOR PAINT TYPES

NOTE: Mils thickness is given in dry film thickness per coat.

A. Concrete Surfaces

1. Latex, Satin

- 1st Coat: Exterior Masonry Acrylic Primer (3.6 mils)
- 2nd Coat: Exterior Latex Satin (1.3 mils)
- 3rd Coat: Exterior Latex Satin (1.3 mils)
- Surfaces: Walls, ceilings, columns, soffits, etc.

2. Latex, Gloss

- 1st Coat: Exterior Masonry Acrylic Primer (3.6 mils)
- 2nd Coat: Exterior Latex Gloss (1.3 mils)
- 3rd Coat: Exterior Latex Gloss (1.3 mils)
- Surfaces: Walls, ceilings, columns, soffits, etc.

B. Masonry Surfaces

1. Latex, Satin

- 1st Coat: Exterior Masonry Acrylic Primer (3.6 mils)
- 2nd Coat: Exterior Latex Satin (1.3 mils)
- 3rd Coat: Exterior Latex Satin (1.3 mils)
- Surfaces: Masonry walls, graphics.

2. Latex, Gloss

- 1st Coat: Exterior Masonry Acrylic Primer (3.6 mils)
- 2nd Coat: Exterior Latex Gloss (1.3 mils)
- 3rd Coat: Exterior Latex Gloss (1.3 mils)
- Surfaces: Masonry walls, graphics.

C. Exposed Metal Surfaces

1. Acrylic Alkyd, Semi-Gloss (Non-Galvanized Surfaces)

- 1st Coat: Universal Metal Primer (2.0 mils)
- 2nd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)
- 3rd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)

2. Enamel, Gloss (Non-Galvanized Surfaces)

- 1st Coat: Universal Metal Primer (2.0 mils)
- 2nd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)
- 3rd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)

3. Acrylic Alkyd, Semi-Gloss (Galvanized Surfaces)

- 1st Coat: DTM Acrylic Primer Finish (3.0 mils)
- 2nd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)
- 3rd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)

4. Enamel, Gloss (Galvanized Surfaces)

- 1st Coat: DTM Acrylic Primer Finish (3.0 mils)
- 2nd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)
- 3rd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)
- 5. Enamel, Gloss (Aluminum)
 - 1st Coat: DTM Primer Finish (3.0 mils)
 - 2nd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)
 - 3rd Coat: DTM Acrylic Coating Semi-Gloss (3.0 mils)
- 6. High-Build Acrylic Polyurethane Enamel – Gloss
 - 1st Coat: Compatible Epoxy Primer (3.0 mils)
 - 2nd Coat: Acrylic Polyurethane Enamel (4.0 mils)
 - 3rd Coat: Acrylic Polyurethane Enamel (4.0 mils)

Surfaces: New metal railings surfaces, interior metal surfaces exposed to high humidity and moisture.
- D. Exterior Exposed Wood Surfaces
 - 1. Latex, Gloss, Paint
 - 1st Coat: Exterior Latex Primer (1.4 mils)
 - 2nd Coat: Exterior Latex Gloss (1.3 mils)
 - 3rd Coat: Exterior Latex Gloss (1.3 mils)
- E. Stucco, Plaster and Manufactured Stone Surfaces
 - 1. Latex, Satin
 - 1st Coat: Exterior Masonry Acrylic Primer (3.6 mils)
 - 2nd Coat: Exterior Latex Satin (1.3 mils)
 - 3rd Coat: Exterior Latex Satin (1.3 mils)
 - 2. Elastomeric Coating system
 - 1st Coat: Exterior Masonry Acrylic Primer (3.6 mils)
 - 2nd Coat: Elastomeric Coating (4.8 mils)
 - 3rd Coat: Elastomeric Coating (4.8 mils)

3.10 INTERIOR PAINT TYPE

NOTE: Mil thickness is given in dry film thickness per coat.

- A. Concrete Surfaces
 - 1. Latex, Satin
 - 1st Coat: Interior Masonry Primer (3.0 mils)
 - 2nd Coat: Latex Egg-Shell (1.6 mils)
 - 3rd Coat: Latex Egg-Shell (1.6 mils)

Surfaces: Concrete walls, concrete ceilings (including precast), concrete locker bases.
 - 2. Gloss Epoxy, Gloss
 - 1st Coat: Interior Masonry Primer (3.0 mils)
 - 2nd Coat: Water Based Catalyzed Epoxy (3.0 mils)
 - 3rd Coat: Water Based Catalyzed Epoxy (3.0 mils)

Surfaces: Floors, stairs, striping on floors.
- B. Masonry Surfaces
 - 1. Latex, Satin
 - 1st Coat: Int/Ext Block Filler (8.0 mils)
 - 2nd Coat: Interior Latex Egg-Shell (1.6 mils)
 - 3rd Coat: Interior Latex Egg-Shell (1.6 mils)

Surfaces: Masonry walls, graphics.
 - 2. Enamel, Gloss
 - 1st Coat: Int/Ext Block Filler (8.0 mils)

- 2nd Coat: Waterborne Interior Gloss Enamel (1.3 mils)
- 3rd Coat: Waterborne Interior Gloss Enamel (1.3 mils)
- Surfaces: Graphics.
- 3. Water Base/Epoxy (Gloss)
 - 1st Coat: Interior Latex Wall Primer (3.0 mils)
 - 2nd Coat: Water Based Catalyzed Epoxy (3.0 mils)
 - 3rd Coat: Water Based Catalyzed Epoxy (3.0 mils)
 - Surfaces: Masonry walls, graphics.
- C. Metal Surfaces
 - 1. Acrylic, Gloss (Non-Galvanized)
 - 1st Coat: Universal Metal Primer (3.0 mils)
 - 2nd Coat: DTM Acrylic Coating Semi-Gloss (1.5 mils)
 - 3rd Coat: DTM Acrylic Coating Semi-Gloss (1.5 mils)
 - 2. Acrylic, Gloss (Galvanized)
 - 1st Coat: DTM Acrylic Primer (3.0 mils)
 - 2nd Coat: Interior Latex Gloss Enamel (1.5 mils)
 - 3rd Coat: Interior Latex Gloss Enamel (1.5 mils)
 - Surfaces: Hollow metal doors, frames, railings, and ferrous metal surfaces.
- D. Exposed Structure
 - 1. Alkyd (Dry Fall-Out) Flat
 - 1st Coat: Dryfall Flat (*)
 - 2nd Coat: Dryfall Flat (*)
 - *Apply at film thickness necessary to achieve hiding and uniform luster.
- E. Wood Surfaces
 - 1. Alkyd Enamel, Semi-Gloss
 - 1st Coat: Interior Alkyd Primer (1.9 mils)
 - 2nd Coat: Interior Alkyd Semi-Gloss (1.7 mils)
 - 3rd Coat: Interior Alkyd Semi-Gloss (1.7 mils)
 - Surfaces: Pegboard, etc.
 - 2. Alkyd Enamel, Gloss
 - 1st Coat: Interior Alkyd Primer (1.9 mils)
 - 2nd Coat: Interior Alkyd Gloss Enamel (1.6 mils)
 - 3rd Coat: Interior Alkyd Gloss Enamel (1.6 mils)
 - Surfaces: All surfaces not factory finished or indicated otherwise.
- F. Gypsum Wallboard Surfaces
 - 1. Latex, Satin
 - 1st Coat: Interior Wall Primer (1.6 mils)
 - 2nd Coat: Interior Latex Eggshell (1.3 mils)
 - 3rd Coat: Interior Latex Eggshell (1.3 mils)
 - Surfaces: Gypsum board walls, gypsum board ceilings, gypsum board bulkheads, graphics.
 - 2. Water Base/Epoxy Gloss
 - 1st Coat: Interior Wall Primer (3.0 mils)
 - 2nd Coat: Water Based Catalyzed Epoxy (3.0 mils)
 - 3rd Coat: Water Based Catalyzed Epoxy (3.0 mils)
 - Surfaces: Gypsum board walls, gypsum board ceilings, gypsum board bulkheads, graphics.
- G. Plaster Surfaces
 - 1. Latex, Semi-Gloss
 - 1st Coat: Interior Wall Primer (1.9 mils)
 - 2nd Coat: Latex Semi-Gloss (1.3 mils)
 - 3rd Coat: Latex Semi-Gloss (1.3 mils)

- Surfaces: Plaster walls, plaster ceilings; plaster bulkheads, graphics.
2. Water Base/Epoxy (Gloss)
 - 1st Coat: Interior Wall Primer (3.0 mils)
 - 2nd Coat: Water Based Catalyzed Epoxy (3.0 mils)
 - 3rd Coat: Water Based Catalyzed Epoxy (3.0 mils)
- Surfaces: Plaster walls, plaster ceilings; plaster bulkheads.

END OF SECTION