

**Summary of Changes:**

**Reason For Changes:**

- Banning crystalline silica in paint is too restrictive. The Federal unified guide paint specs ban crystalline silica as blast media but not for use in paint. This proposal mirrors the Federal unified guide specs as it relates to crystalline silica.
- The existing language banning EPA regulated or hazard materials is too broad, ambiguous and not practical. The universe of EPA regulated and hazardous material is large and diverse.

**1. COORDINATION ISSUES:**

**1.1 Repainting:** Coordinate the work of Guide Specification Section 09901 with the State's testing for lead containing paint (LCP) and requirements for procedures for disturbance, removal, encapsulation and disposal of LCP for this project. Refer to TG01715.

**1.2 Factory and Shop Primed Surfaces:** Address field applied finishes to be applied to factory or shop primed surfaces, especially for mechanical and electrical equipment.

**2. DESIGN ISSUES:**

**2.1 Painting:** For painting over concrete surfaces. Refer to Portland Cement Association article on painting concrete.

**2.2 Repainting:**

**2.2.1** If existing work is badly rusted and its removal would destroy it or compromise its integrity, call for its removal and replacement.

**2.2.2** Where the existing paint finish has failed (for example blistering, peeling, efflorescence, and other similar items) address its correction to ensure proper paint adhesion. Consultant shall perform adhesion testing on existing coats including subsurface coats in conjunction with consultant's field investigation.

**2.2.3** For existing acoustical tiles to be repainted, carefully check their condition to ensure that its surface will support and accept being repainted. Sometimes the material's surface delaminates upon paint application.

**2.2.3** For repainting work, make a field check of existing door/jamb conditions. Where the space between the door and jamb is tight or if there are signs of binding or surface-to- surface contact, call for sanding of the door edge (wood doors) or adjustment of the door and/or frame (metal doors) to eliminate touching of newly painted surfaces.

**2.3 Metal Roofs:**

- 2.3.1** Fading: In the past, the majority of the metal roofs especially on the Big Island were field painted and finished using Portland Cement paints. Do not use or specify portland cement based paint for roof coatings.
- 2.3.1.2** As a guide: Unless the project requires special coatings for corrosion resistance (such as aliphatic acrylic polyurethane paints), resin fortified acrylic paints having pigments ground into the paint at the factory are acceptable. Examples of these paints, which have performed well, are:  
Benjamin Moore #129 Acrylic Roof Paint  
Sinclair Dectone  
Consultant shall attempt to verify the actual field performance of equivalent paints including those submitted for substitution. Make sure Quality Control Branch and the DAGS District Manager approves the selection or substitution.
- 2.3.2** Verify the compatibility between the new and existing paint. Paints which have performed poorly or which have exhibited discoloration, fading or color shifting such as United Coatings Roofshield 60 shall not be specified.
- 2.3.3** For new projects, roofing panels pre-finished at the factory with finish systems such as Kynar with protective coatings (heavy-duty; approx. 1.5 mil total thickness) shall be specified.

### **3. DRAWING NOTES:**

**3.1 Repainting Information Required:** Show the following on the drawings:

- 3.1.1** Areas of paint failure.
- 3.1.2** Areas of mildew on the building elevations and reflected ceiling plan.
- 3.1.3** Full extent of repainting work.

### **4. STANDARD DRAWINGS: (Not Used)**

### **5. SPECIFICATION NOTES:**

#### **5.1 Paint Selection**

- 5.1.1** General: Finish top-coats shall be 100 percent acrylic, exterior type. The acrylic or silicone binder helps to form a protective barrier that keeps calcium salts from penetrating the paint film and its resistance to ultraviolet rays will help prevent chalking and premature fading.
- 5.1.2** New Construction Paint selection:
- 5.1.2.1** Provide a color schedule in the bidding documents reflecting color selections which are agreeable to the user and DAGS. Colors selected should not require more than routine maintenance to present a clean appearance.

**5.1.2.2** Should time constraints preclude the development of an acceptable color schedule, specify that no more than 6 interior and 6 exterior standard colors shall be used.

**5.1.2.3** Gloss or semi-gloss finish paints shall be used for both interior and exterior surfaces. Flat or low luster finish paints shall not be used unless approved by the Project Coordinator, User and DAGS Central Services Division.

**5.1.2.4** Unless required for a particular application, alkyd or oil-based paints should not be specified. These paints tend to discolor (i.e. yellow) over time and creates adhesion problems on repainting projects. Saponification (reaction between the oil & alkaline conditions) is also a potential problem.

**5.1.2.5** Elastomeric coatings shall not be used unless as a corrective measure (e.g. on exterior walls where leaks have occurred) or where the wall is continually exposed to wind driven rain.

**5.1.2.6** New Painting: If an elastomeric paint is necessary, consider using silicone based elastomeric coating such as Dow Corning AllGuard. On concrete and CMU surfaces, provide an alkaline resistant primer. In addition, for new CMU work, specify backrolling of paint that has been spray-applied to ensure full coverage into holes and crevices.

### **5.1.3 Repainting Existing Facilities:**

**5.1.3.1** If the existing color scheme is to be followed, the specifications shall call for matching the existing colors. The color scheme shall be agreeable with DAGS and the User Agency.

**5.1.3.2** Specifications shall be written to allow the use of airless spraying. Confirm with Project Coordinator if spray painting will be prohibited or restricted for this project.

## **5.2 Minimum Painting Requirements:**

**5.2.1** Paint system for interior gypsum board, concrete masonry, and concrete wall surfaces (new construction):

Three coat system consisting of;

1 coat Color Primer or Sealer or Block Filler.

1 coat Intermediate, Semi Gloss Finish.

1 coat Topcoat, Semi Gloss Finish.

**5.2.1.1** On reprinting, interior surfaces should have a two coat system unless a DOE project which shall have a three coat system.

**5.2.2** Transparent Finishes on Wood: Require hardwood surfaces to be stained to match each other before the clear finish coat is applied.

## **5.3 Identified Problems:**

**5.3.1** High alkalinity substrates: Generally, and especially on the Big Island we have high alkalinity levels in the concrete and masonry construction. High levels (between 11 - 13) have been recorded on both interior and exterior surfaces, even after the material has been allowed to cure for several months. Such high alkali levels can “burn” through the binder of latex paints, causing color fade, cracking and peeling. Therefore, for new projects, especially on the Big Island, address the following:

**5.3.1.1** Substrate: Require concrete and masonry surfaces to be fully cured and dry in accordance with the paint manufacturer's instructions and recommendations prior to painting, .

**5.3.1.2** Preparation: Require efflorescence and laitance to be removed from the surface.

**5.3.1.3** Testing: Require interior and exterior concrete and masonry surfaces (including grout joints) to be tested to determine moisture content and alkalinity level prior to paint application. Require testing to be performed in strict accordance with the test kit manufacturer's instructions. Test results shall be submitted to the Contracting Officer.

**5.3.1.4** Where the alkalinity level exceeds the resistance level of the proposed primer (accepted under Shop Drawing submittal), painting shall not commence until the alkaline level has dropped to within that permitted by the primer or a different primer that is able to resist the measured alkalinity and is compatible with the paint finish (i.e. approved by the manufacturer of the finish paint) shall be provided. The substitute primer shall be submitted to the Contracting Officer for review and acceptance and shall be provided at no additional cost. If a primer able to resist the alkaline level is not available and the construction schedule cannot accommodate a waiting period, the surface shall be neutralized in accordance with the primer manufacturer's instructions to reduce the alkaline level to within that permitted by the primer. Acid washing will not be permitted where the surface has been finished with a cementitious coating (e.g. cement wash) because the acid will cause the material to deteriorate and become dusty.

**5.3.1.5** Only alkali resistant primers having an alkalinity resistance level of at least 10.0 shall be specified. Epoxy based primers are recommended. Alkyd based primers and top-coats or epoxy ester primers shall not be used. The following epoxy based primers are acceptable products:

- a. Sinclair #18 Epoprime: 2-component Epoxy Primer  
Allowable pH level: 12.0

Other primers with a high resistance level that were used on other projects:

- b. Pittsburgh Paints Speedhide, Acrylic Latex Primer  
Allowable pH level: 10.0
- c. Spectra-Tone #089: Styrene Acrylate Masonry Primer  
Allowable pH level: 11.5

- d. Sherwin Williams Loxon Pigmented Acrylic Sealer / Conditioner: Acrylic Primer  
Allowable pH level: 13.0
- e. Benjamin Moore CLF29/CLF30 Waterborne Epoxy Masonry Primer:  
2-component Epoxy Primer  
Allowable pH level: 12

### 5.3.3 Paint Color Pricing:

5.3.3.1 The painting contractors are unable to provide good competitive bids because of uncertainties as to the number of different colors and tones (especially deep or decorator colors) which will be selected.

5.3.3.2 Claims by painting contractors that more than the "standard" number of colors are being selected (some being the category of graphics), necessitating extensive negotiation and subsequent change orders.

### 5.3.4 Paint Finish:

5.3.4.1 Elastomeric paints have a flat, low-lustre finish that holds dust and dirt. This gives the surfaces an unsightly appearance that is difficult to clean. Although semi-gloss top-coats have been applied on several projects to resolve the problem, this practice is not in accordance with the paint manufacturer's instructions and its long-term performance has not been proven (i.e. potential problem having a hard finish coat over a soft undercoat).

## 5.4 Existing Hazardous Substances in Repainting

5.4.1 New OSHA rules were adopted in Hawaii on June 21, 1993 under an emergency temporary standard as Chapter 12-148, Hawaii Administrative Rules. As of the date of this memo, work involving the disturbances of lead based paint shall reference this chapter in Section 01715. When the project includes paint to be disturbed that was applied prior to 1980, it shall be assumed to contain lead. Include the following paragraph shall be included in Section 01715 and in Section 09901:

"The contractor shall inform his employees, subcontractors and all other persons engaged in the project that lead containing paints are present in the existing building at the job site which requires following the requirements of Title 12 (Department of Labor and Industrial Relations), Subtitle 8 (Division of Occupational Safety and Health), Chapter 148 (Lead Exposure in Construction), Hawaii Administrative Rules."

5.4.2 If testing for lead was done, any data collected shall be appended to Section 01715 and the following paragraph shall be added to Section 01715:

"The contractor shall review the attached lead testing data and insure he fully understands where lead containing paints have been identified, that the testing was for design purposes only, and that the results do not satisfy any of the requirements of the Chapter 12-148."

- 5.4.3** Modify existing surface preparation methods to address health and environmental concerns such as existing lead based paint surfaces, substrates containing asbestos and others. Ensure proper precautions are taken and that proper paint adhesion is attained.
- 5.5** Painting Schedule - Use the Masters Painting Institute Approved Product List to specify products and to determine equivalent products. Do not specify a product or manufacturer that is not on the list. If Project conditions warrant a deviation, confirm your recommendations with the Project Coordinator.

## **6. GUIDE SPECIFICATIONS:**

### **6.1 Section 09901 Painting**

- 6.1.1** This section includes preparing, priming, painting and staining finishes to surfaces scheduled at the end of the section. Section also includes field applied finished for mechanical, electrical and other equipment items.
- 6.1.2** This section covers new painting. Edit section 09901 for repainting of existing painted surfaces in alteration contract and maintenance repainting contract work.
- 6.1.2.1** For projects which require substantial new painting and a minor amount of repainting work, edit 09901 and include relevant paragraphs from 09902.
- 6.1.2.2** For projects which require substantial repainting painting and a minor amount of new painting work, edit 09902 and include relevant paragraphs from 09901.

### **6.2 Section 09902 Repainting**

- 6.2.1** This section includes preparing, priming, painting and staining finishes to surfaces scheduled at the end of the section. Section included field applied finished for mechanical, electrical and other equipment items.
- 6.2.2** This section covers repainting of existing painted surfaces in alteration contract and maintenance repainting contract work. Edit section 09901 for painting of new construction.
- 6.2.2.1** For projects which require substantial new painting and a minor amount of repainting work, edit 09901 and include relevant paragraphs from 09902.
- 6.2.2.2** For projects which require substantial repainting painting and a minor amount of new painting work, edit 09902 and include relevant paragraphs from 09901.

Be aware of regulatory requirements and restrictions on certain types of paint. In occupied buildings, for paints that have objectionable odors (e.g. epoxies), ensure the paints are applied after business hours or special ventilation procedures are in effect. Identify the paints and protective measures.

***SPECIFIER'S NOTE: Blue colored italicized text is used for notes to the specifier and should be completely deleted from the final text. Where [Red colored***

*italicized text in parentheses*] is shown in this specification section, insert wording, numbers, etc. as appropriate and delete parentheses. Where **<Red colored text in brackets>** is shown, a choice is indicated. Make the appropriate choice and delete the brackets. Maintain footer notation with the current version used (e.g. TG09900 v0~~28~~.08~~2~~). Verify that section titles cross referenced in this Section correspond to this Project's specifications; Section titles may have changed.

## SECTION 09901 - PAINTING

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. This Section includes surface preparation and field painting of exposed **<exterior> <and> <interior>** items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, DAGS representative will select from standard colors and finishes available.
1. Interior and Exterior surfaces scheduled to be finished.
  2. Non Ferrous metals, plated or factory finished items specifically noted to be painted or when such items occur as accessories and appurtenance to surfaces required to be painted.
  3. Pipes, conduit, ducts, support apparatus and other exposed mechanical and electrical items **<in areas to be painted>**. Exterior mechanical and electrical equipment and items on the roof or building exterior.
- C. Surfaces not to be finished, unless otherwise indicated.
1. Concrete floors, paving walks stairs and textured concrete. Other concrete surfaces scheduled not to be painted.
  2. Stone Masonry and masonry scheduled to receive water repellent coatings.
  3. Structural steel and metal elements designated to receive sprayed fireproofing unless such finishes have been UL tested with the designated assembly and are approved by the fireproofing manufacturer.
  4. Finish hardware, unless prime coated.
  5. Glass, plastic laminate, and ceramic tile.
  6. Acoustical ceilings, unless scheduled to be painted.
  7. Integrally colored plaster or EIFS systems.
  8. Flooring and floor coverings.
  9. Plumbing and lighting fixtures, and electrical device plates.
  10. Movable furniture such as portable bookshelves, cubicles and cabinets.

***SPECIFIER'S NOTE: Edit paragraphs 1.01.D and subparagraphs below to suit Project. Special corrosive resilient coatings should be considered for exterior***

***mechanical and electrical equipment, either factory or field applied. Coordinate with other disciplines.***

- D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
1. Prefinished items include the following factory-finished components:
    - a) Architectural woodwork.
    - b) Acoustical wall panels.
    - c) Metal, phenolic, or plastic toilet enclosures.
    - d) Metal, phenolic, or plastic lockers.
    - e) Elevator entrance doors and frames.
    - f) Elevator equipment.
    - g) Finished mechanical and electrical equipment.
    - h) Light fixtures.
    - i) ***[Insert other prefinished items if required.]***
  2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
    - a) Foundation spaces.
    - b) Furred areas.
    - c) Ceiling plenums.
    - d) Utility tunnels.
    - e) Pipe spaces.
    - f) Duct shafts.
    - g) Elevator shafts.
    - h) ***[Insert other concealed surfaces if required.]***
  3. Finished metal surfaces include the following:
    - a) Anodized aluminum.
    - b) Stainless steel.
    - c) Chromium plate.
    - d) Copper and copper alloys.
    - e) Bronze and brass.
    - f) ***[Insert other finished metal surfaces if required.]***
  4. Operating parts include moving parts of operating equipment and the following:
    - a) Valve and damper operators.
    - b) Linkages.
    - c) Sensing devices.
    - d) Motor and fan shafts.
    - e) ***[Insert other operating parts if required.]***
  5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

***SPECIFIER'S NOTE: List below contains items that are usually shop primed and materials that might be specified in this Section. List should only include products that the reader might expect to find in this Section but are specified elsewhere. Revise to suit Project.***

#### 1.02 RELATED SECTIONS

- A. Section ***[Insert Division 2 section number and title]***: for traffic-marking paint.

- B. Section ***[Insert Division 2 section number and title.]*** for shop priming structural steel.
- C. Section ***[Insert Division 6 section number and title.]*** for shop priming architectural woodwork.
- D. Section ***[Insert Division 8 section number and title.]*** for factory priming steel doors and frames.
- E. Section ***[Insert Division 7 or 9 section number and title.]*** for elastomeric and other high performance coatings.
- F. Section 09901 Repainting: for repainting of previously painted surfaces.
- G. Divisions 15 and 16, identification marking of painting of mechanical and electrical equipment and apparatus.

***SPECIFIER'S NOTE: If allowances or unit prices apply to work of this Section, insert brief paragraphs here to alert Contractor and reference appropriate Division 1 Section for specific details.***

#### 1.03 REFERENCES

- A. ASTM D16 - Definition of terms relating to Paint, Varnish, Lacquer and Related Products.
- B. ASTM D2016 - Test Method for Moisture Content of Wood.
- C. MPI (Master Painter's Institute) - Approved Product List.
- D. PCDA (Painting and Decorating Contractors of America - Painting - Architectural Specification Manual.
- E. PCA (Portland Cement Association) - Painting Concrete.
- F. SSPC (Steel Structures Painting Council - Steel Structures Painting Manual)

#### 1.04 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.

#### 1.05 SUBMITTALS

- A. Product Data:
  - 1. Materials List: Provide an inclusive list of required patching and coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
    - a. For products with premixed colors, provide manufacturer's standard color chips for selection by Contracting Officer.
  - 2. Manufacturer's Information: Provide data on all listed materials, including:
    - a. Thinning and mixing instructions
    - b. Application instructions and required mil film thicknesses.
    - c. Manufacturer's Material Safety Data Sheets.

- B. Certifications: Provide a letter certifying paints and coatings are free of asbestos, lead, zinc-chromate, strontium chromate, cadmium, and mercury and mercury compounds, crystalline silica and other EPA regulated and hazardous materials. Provide a letter certifying the amounts of mildewcide added by both the paint manufacturer and paint supplier. Provide a letter certifying that abrasive blast media are free of crystalline silica.
- C. Schedule of Finishes: Provide finish schedule including paint spread rates required to achieve final dry film thickness indicated in the schedule.
- D. Schedule of Operations: Provide a work schedule showing sequence of operation and installation dates.

***SPECIFIER'S NOTE: Include the following paragraphs 1.05.D & E for submissions of physical samples for selection or approval of finish, color, texture etc. The first paragraph is intended for selecting colors from manufacturer's color chips. The second paragraph is for reviewing colors that have been selected on larger samples. If colors and finishes are preselected, eliminate paragraph 1.05.E.1 and delete the italicized statement "After color and finish sample are returned" in paragraph 1.05.E.2. Modify number of paint coats for repainting work.***

- E. Samples:
  - 1. Submit color and finish samples, at manufacturers normal paint chip size illustrating range of colors and textures available for each surface finishing product scheduled.
  - 2. **<After color and finish sample are returned>**, submit paint finish samples, 8.5" x 11" in size illustrating selected colors and textures for each selection. Divide sample in horizontal strips showing prime and overlapping **<second and finish coats>**. Show coat tinting. Prepare transparent finish samples on same material as that on which coating will be applied. Identify each sample.
- F. Manufacturer's Instructions: Indicate special surface preparation procedures, and substrate conditions requiring special attention. Refer to Section 3.01.

***SPECIFIER'S NOTE: Request samples only for unusual substrates, or where color and texture are required to match an existing historical painted or stained surface.***

- G. Samples for Initial Selection: For each type of finish-coat material indicated.
  - 1. After color selection, Contracting Officer will furnish color chips for surfaces to be coated.
  - 2. Submit 3 samples on the following substrates for Contracting Officer's review of color and texture only:
    - a. Concrete: 4-inch- square. Samples for each color and finish.
    - b. Concrete Unit Masonry: 4-by-8-inch Samples of masonry, with mortar joint in the center, for each finish and color.
    - c. Painted Wood: 8-inch-square. Samples for each color and material on hardboard.
    - d. Stained or Natural Wood: 4-by-8-inch. Samples of natural or stained wood finish on representative **[Insert species of wood to be used]** surfaces.

- e. Ferrous Metal: 3-inch- square samples of flat metal and 6-inch- long samples of solid metal for each color and finish.
- H. Provide a Comprehensive Spray Plan when airless spraying is proposed.
- I. Qualification Data: For Applicator.

***SPECIFIER'S NOTE: Include paragraph 1.05.J for DOE School Projects and University Projects.***

- J. Delivery Receipts: Provide 3 copies of the delivery receipt, signed by the user's representative, attesting to delivery of extra paint as required under 1.09

**1.06 QUALITY ASSURANCE**

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

***SPECIFIER'S NOTE: Retain paragraph 1.06.B except where special alkali resistant primers are required. See Technical Guide.***

- B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
  - 1. Exception: Alkali resistant primers if compatible with the intermediate coat paint products.

***SPECIFIER'S NOTE: Confirm requirement for benchmark samples with Project Coordinator.***

- C. Field Samples (Mockups): Provide a full-coat field sample panel for each type of coating and substrate scheduled in Part 3. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.
  - 1. Contracting Officer will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.
    - a. Wall Surfaces: Provide samples at least 4 feet long by 8 feet high unless indicated otherwise on drawings.
    - b. Small Areas and Items: Contracting Officer will designate items or areas required.
  - 2. Apply benchmark samples, according to requirements for the completed Work. Provide temporary lighting levels similar to permanent lighting conditions for Contracting Officer's evaluation.
    - a. After finishes are accepted, Contracting Officer will use the room or surface to evaluate coating systems of a similar nature.
- D. Provide a Comprehensive Spray Plan when airless spraying is proposed. to include:
  - 1. Documentation that the individual spray applicator(s) on the project have completed an approved "Spray Applicator Certification Program" conducted by the Painting Industry of Hawaii. The certification program shall include material and equipment selection, use and maintenance, hands-on application and safety training.

2. Proposed overspray protection methods.
3. Paint Manufacturer's spray application instructions and recommendations for products to be used.

***SPECIFIER'S NOTE: Include following paragraph 1.06.D.4 for buildings with central air conditioning or ventilation.***

4. Proposed schedule to shut-down and covering existing air-conditioning and ventilation equipment and existing air intake, return and diffuser grilles.

1.07 REGULATORY REQUIREMENTS

- A. Comply with State OSHL (Occupational Safety and Health Law) and pollution control regulations of the State Department of Health and EPA.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's brand name and lot number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions and coverage.
7. Color name and number.
8. VOC content.

B. Storage

1. Non-flammable Materials: Store materials not in use in tightly covered containers in a well-ventilated area. Maintain storage containers in a clean condition, free of foreign materials and residue.
2. Flammable Materials:
  - a. Store in such a manner as to prevent damage. No paint material, empty cans, paint brushes and rollers may be stored in the building(s). Store these items in separate storage facilities away from the building(s). Contractor may furnish a separate job site storage structure, if the structure complies with the requirements of the local Fire Department. Keep the storage area shall clean. Lock any storage structures when not in use or when no visual supervision is possible.
  - b. All rejected materials shall be removed from the job site immediately.

1.09 PROJECT CONDITIONS

- A. Do not apply materials when surfaces and ambient temperatures are outside the ranges required by the paint product manufacturer. Do not apply exterior coatings during rain or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- B. Protect public, pedestrians and tenants from injury. Provided, erect and maintain safety barricades around scaffolds, hoists and where construction operations create hazardous conditions.
- C. Completed Work: Provide necessary protection for wet paint surfaces.
- D. Protective Covering and Enclosures: Provide and install clean sanitary drop cloth or plastic sheets to protect furniture, equipment, floor and other areas that are not scheduled for treatment. Remove any paint applied to surfaces not scheduled for treatment.
- E. Fire Safety: Contractor and its employees shall not to smoke in the vicinity of the paint storage area. Exercise precautions against fire at all times and remove waste rags, plastic (polyester sheets), empty cans, etc. from the site at the end of each day.
- F. Where airless spraying is used, ensure that protective enclosures are erected to prevent the escape of overspray from the work area.
- G. Safeguarding Property: Safeguard the work and also the property of the State and other individuals in the vicinity of Contractor's work. Make good on any damages and for losses to work or property caused by Contractor or its employee's negligence. Where damaged property cannot be cleaned and restored to its original condition (i.e. prior to being damaged) replace it with a new product of equal quality. No prorating or use of "used" products will be permitted.

***SPECIFIER'S NOTE: Delete paragraphs 1.09.G.1 thru 1.09.G.3 below when spray painting is not used.***

1. For painting and spray painting operation, assume that cars will not be temporarily relocated from parking areas during the painting operations.
2. Paint overspray shall not carry more than 5 lineal feet beyond the building eave line nor within 10 lineal feet of pedestrians or property and surfaces not scheduled to be painted. Immediately cease spray painting when overspray carries beyond these specified limits. Do not continue until protective barriers are erected to properly contain the overspray and damages caused by the overspray have been corrected.
3. The Contractor shall be assessed \$300.00 for each incidence of property or personal damage caused by overspray until such time that a satisfactory settlement has been agreed upon by the damaged party and corrective action has been completed. All corrective action shall be settled within 24 hours from the time the damage is discovered. Should the Contractor fail to take corrective action in a timely and expeditious manner, the Contracting Officer shall contact the Contractor's Insurance company to seek resolution on the matter.

***SPECIFIER'S NOTE: Use paragraph 1.10.A for DOE Schools and University Projects only.***

**1.10 EXTRA MATERIALS**

- A. Provide extra paint in each of the different colors, types and surface textures of exterior and interior paint to the user / school upon completion of the project. Paint shall be in unopened one gallon containers and labeled with color, type, texture, room locations, and date in addition to manufacturer's label.
  - 1. Provide 5 gallons of each color for paint used over large areas, such as the exterior of the building and in several classrooms.
  - 2. Provide 1 gallon of each color for all other areas.

**1.11 WARRANTY**

- A. Provide a two year guarantee that the work performed under this section conforms to the contract requirements and is free of any defect of material or workmanship.

**PART 2 - PRODUCTS**

**2.01 PAINT MATERIALS, GENERAL**

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Mildewcide
  - 1. Except for metal primers, provide primer and finish coats with suitable chemical mildewcide to the maximum amount of mildewcide per gallon of paint permitted by the mildewcide manufacturer without adversely affecting the quality of the paint, but not less than one ounce per gallon.
- C. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
  - 1. Proprietary Names: Use of manufacturer's proprietary product names in the Paint Systems Schedule in Part 3 below to designate colors or materials, is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed products to be used.
  - 2. Equivalency: Equivalent products to the specified products are listed in the Master Painter's Institute's "Architectural Painting Specification Manual."
  - 3. Substitution: Requests for substitution of a product or product if a manufacturer is not on the "Approved Product List" will be evaluated for equivalency based on product test results per the test criteria of the Master Painter's Institute.

D. Colors: **<Match Contracting Officer's samples> <As indicated by manufacturer's designations as scheduled in Part 3 below> <As selected by Contracting Officer from manufacturer's full range>.**

E. ~~EPA Regulated and~~ Hazard Materials: Do not use paint or paint products containing asbestos, lead, mercury and mercury compounds, zinc chromates, strontium-chromate, and cadmium ~~or the EPA regulated or hazard materials.~~ Do not use abrasive blast media that contain crystalline silica.

## 2.02 MISCELLANEOUS MATERIALS

A. Provide patching and repair materials. Compatible with paint finishes and substrates. Use weather resistant materials for exterior surfaces and surfaces exposed to moisture.

### B. Accessories

1. General: Provide other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
2. Thinners: Thinning of paint shall be done using material recommended by the manufacturer. Mix proprietary products according to manufacturer's requirements. Do not use compound thinner, mineral oil, kerosene, refined linseed oil, or gasoline for thinning.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application. Comply with procedures specified in PDCA P4.
1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
    - a) Ensure that concrete and masonry surfaces are cured and dried pt meet paint manufacturer's recommendations.
  2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.

***SPECIFIER'S NOTE: Coordinate primers specified in other Sections with undercoats and finish materials specified in this Section to ensure compatibility of materials. Some finish-coat materials, such as lacquers and epoxies, lift oil and oleoresinous air-dry primers. A long-oil finish coat may crawl and have poor adhesion when used over zinc-dust phenolic or baked primers.***

- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
1. Notify Contracting Officer about anticipated problems when using the materials specified over substrates primed by others.

***SPECIFIER'S NOTE: Use specific surface preparation standards such as those established by the Steel Structures Painting Council (SSPC) or the National***

***Association of Corrosion Engineers (NACE) where necessary to address specific project conditions and ensure proper paint adhesion. Require submittal of the referenced standard for use by the Project Inspector to aid checking and acceptance of the surface preparation.***

### 3.02 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
  
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove dust, oil and grease before cleaning.
  - 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
  
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
  - 1. Provide barrier coats over incompatible primers or remove and reprime.
  
- D. Surface Preparation Cementitious Materials: Prepare concrete, concrete unit masonry, 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.
  - 1. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
  
  - 2. Determine alkalinity and moisture content of surfaces by performing appropriate tests. Submit test results to Contracting Officer.
    - a. Prior to painting, concrete and masonry surfaces shall be allowed to cure and dry in accordance with the paint manufacturer's instructions and recommendations.
  
    - b. Efflorescence and laitance shall be removed from the surface.
  
    - c. Prior to paint application, interior and exterior concrete and masonry (including grout joints) scheduled to receive paint shall be tested to determine the alkalinity level of the surface. Testing shall be performed in strict accordance with the test kit manufacturer's instructions. Submit test results to the Contracting Officer.
  
    - d. Where the alkalinity level exceeds the pH level limit of the primer take one of the following three remedies at no additional cost to the State:
      - 1) If new concrete or masonry, wait until alkaline level has dropped below the limit.
  
      - 2) Substitute a primer that is able to resist the measured alkalinity and that is compatible with the paint finish. Alkyd based primers and top-

coats or epoxy ester primers shall not be used. Submit the substitute primer to the Contracting Officer for review.

- 3) Neutralize the surface in accordance with the primer manufacturer's instructions to reduce the alkaline level. However, acid washing is not permitted where the surface has been finished with a cementitious coating.
3. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.
- C. Surface Preparation Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
1. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
  2. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
  3. If transparent finish is required, backprime with spar varnish.
  4. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
  5. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.

***SPECIFIER'S NOTE: Specify specific surface preparation standards such as those established by the Steel Structures Painting Council (SSPC) or the National Association of Corrosion Engineers (NACE) where necessary to address specific project conditions and ensure proper paint adhesion. Require submittal of the referenced standard for use by the Project Inspector to aid checking and acceptance of the surface preparation. Delete subparagraph below if blast cleaning is not required. SSPC-SP 10/NACE No. 2 requires a higher level of preparation than is often justified. Reduce preparation level to SSPC-SP 6/NACE No. 3 if warranted.***

- D. Surface Preparation Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
1. Blast steel surfaces clean as recommended by paint system manufacturer and according to **<SSPC-SP 6/NACE No. 3> <SSPC-SP 10/NACE No. 2>**.
  2. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.

3. 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 same primer as the shop coat. Spot priming specified here shall be in addition to full prime painting scheduled in Part 3 below.
- E. Surface Preparation Galvanized Surfaces: 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 methods.
- F. Surface Preparation Copper Surfaces:
1. Copper Surfaces Scheduled for Paint Finish: Remove contamination by steam, high pressure wash, or solvent clean. Apply vinyl etch primer immediately following cleaning.
  2. Copper surfaces scheduled for 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 surface with clear water and allow to dry.
- G. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
  2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
  3. Use only thinners approved by paint manufacturer and only within recommended limits.
- H. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

***SPECIFIER'S NOTE: Revise this Article 3.03 to suit Project, and, if required, add special restrictions on application methods.***

### 3.03 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
  2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
  3. Provide finish coats that are compatible with primers used.

4. The term “exposed surfaces” includes areas visible when permanent or built-in fixtures, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
  5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only unless otherwise noted.
  6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
  7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
  8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
  9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
  10. Sand lightly between each succeeding enamel or varnish coat.
  11. Ensure primers are top coated within the times required by the paint manufacturers. Top coats not applied within the recoating window may be rejected.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer’s written instructions, sand between applications.
  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. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
  3. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
  4. Be aware of the requirements for, and restrictions on, spray painting contained in PROJECT CONDITIONS Paragraph.

***SPECIFIER'S NOTE: Delete spray application in paragraph 3.03.C below if prohibited on job site. Spray application of paints can damage sensitive electronic operating equipment and might cause problems for personnel in occupied buildings.***

- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
  - 1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
  - 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
  - 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

***SPECIFIER'S NOTE: Paragraph 3.03.E below is an example of painting requirements for mechanical and electrical work. Revise paragraphs 3.03.E through 3.03.G to suit Project. Differentiate factory prime and finish coats in the respective Mechanical and Electrical sections of this Specification.***

- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- F. Mechanical items to be painted include, but are not limited to, the following:
  - 1. Uninsulated metal piping.
  - 2. Uninsulated plastic piping.
  - 3. Pipe hangers and supports.
  - 4. Tanks that do not have factory-applied final finishes.
  - 5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
  - 6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
  - 7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
  - 8. ***[Insert mechanical items to be painted]***
- G. Electrical items to be painted include, but are not limited to, the following:
  - 1. Switchgear.
  - 2. Panelboards.

3. Electrical equipment that is indicated to have a factory-primed finish for field painting.
  4. ***[Insert electrical items to be painted]***
- H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
  - I. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
  - J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
  - K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
    1. Provide satin finish for final coats.
  - L. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.
  - M. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

***SPECIFIER'S NOTE: On projects requiring painting of large surface areas, such as building exteriors, alkalinity and adhesion testing shall be performed by either a NACE certified inspector or an independent testing laboratory. On projects with minor painting work, testing shall be performed by contractor's quality control manager.***

#### 3.04 FIELD QUALITY CONTROL TESTING

- A. Inspection and Approvals: Obtain written approval upon completion of each phase of work (phases of work are: surface preparation and spot prime, prime, first finish coat, second finish coat) before proceeding into the next phase or work. For any particular area of work that deviates from the submitted work schedule, notify the Contracting Officer one day (24 hours minimum) in advance when completing any phase of work. Provide access to areas to be inspected.
  1. Failure to obtain approval of any phase of work for a work area may result in redoing the operation at no cost to the State.
  2. Right of Rejection: Non conforming work will be rejected by the Contracting Officer. Remove rejected material from the job site immediately. Redo rejected work at no cost to the State.

- B. Thickness Testing: The Contracting Officer will require all paints and their applied thickness tested determine compliance with the Contract Documents. The State will select a laboratory, and the cost of testing shall be borne by the Contractor.
1. Where the required paint thickness is deficient, provide additional coats to the affected surface(s) to meet the required paint thickness.
  2. Test schedule: ***[Insert number and locations of required tests]***
  3. Tests shall be paid by Contractor and shall be performed by ***[Insert tester]***.
- C. Moisture Testing: 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 percent.
  2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
  3. Interior Wood: 15 percent, measured in accordance with ASTM D2016.
  4. Exterior Wood: 15 percent, measured in accordance with ASTM D2016.
- D. Alkalinity Testing: Measure pH Level of surface to be painted. Notify Contracting Officer if alkalinity level is below the maximum permitted by the paint or primer manufacturer.
1. Test schedule: ***[Insert number and locations of required tests]***
  2. Tests shall be paid by Contractor and shall be performed by ***[Insert tester]***.
- E. Adhesion Testing:
1. Provide adhesion testing per ASTM D3759 Test B (x scratch peel test):
    - a. Test after each scheduled paint coat.
    - b. Should test fail, remove paint, prepare surface, then recoat and test again.
  2. Testing shall be performed by a NACE certified inspector selected by the State. The cost of testing shall be borne by the Contractor.
  3. Test schedule: ***[Insert number and locations of required tests]***
  4. Tests shall be paid by Contractor and shall be performed by ***[Insert tester]***.
- F. Independent Coating Inspector: Employ independent coating inspector(s) from one of the approved agencies listed in Section 01400 – Quality Requirements (hereafter referred to as “coating inspectors”) to assure the quality of work at all times. Employ adequate coating inspectors to properly verify and approve the work in progress. It is the responsibility of the General Contractor to provide sufficient coating inspection personnel.
1. The coating inspector(s) shall not report to the on-site project manager or foreman. He shall report to the Contracting Officer. It is the intent of this provision to make sure the individual(s) in direct control of production do not have supervisory rights over the coating inspector(s).

2. The coating inspector(s) shall have 10 years cumulative experience. It is the intent of this provision to make sure that the inspection team is properly supervised and that an experienced team of inspectors is provided to the State.
3. The independent coating inspection agency shall at a minimum have the following inspection equipment on site and in good working order.
  - a. Two – Positector 2000 or other approved electronic dry film thickness gages.
  - b. Two – Sling Psychrometers.
  - c. \_\_\_\_\_ Replica Tape and Spring Micrometer.
  - d. One – Tooke Gage.
  - e. One - \_\_\_\_\_ Pull-off Gage.
  - f. Two – Surface Temperature Thermometers.
  - g. One – Low Voltage Holiday Tester.
  - h. One – Dwyer Model #400 Manometer.
  - i. Two – Industrial Quality Flashlights.
  - j. One - #2 Zahl Cup.
  - k. One - #4 Zahl Cup
  - l. One – 35mm camera capable of automatically labeling the photos with the day and time the photo was taken.
4. The coating inspector(s) are required to thoroughly document the progress, general quality of the work, and any non-compliant work with photographs.
5. The coating inspector(s) shall submit inspection reports and any type of deficiency reports to the Contracting Officer and Contractor simultaneously. This shall be done daily in a manner agreed to by the Contracting Officer, the coating inspector(s), and the Contractor. Reports and any non-compliance notice shall be sent by fax to the agency's home office and to the Contracting Officer each day.
6. The coating inspector(s) office shall be located in the Contracting Officer's field office.
7. The Contractor shall not proceed with the next phase of work for each member to be painted until receiving approval from the coating inspector(s) for the following items of work:
  - a. Grinding of sharp corners and welds.

- b. Blasted surface, including cleaning.
  - c. Blow-down and vacuuming completed prior to any painting operation within containment.
  - d. Primer thickness.
  - e. Complete abrasive removal from each contained area before proceeding with the application of intermediate coat.
  - f. Dry spray and abrasive removal from primer.
  - g. Intermediate coat thickness.
  - h. Dry spray removal from intermediate coat.
- G. Manufacturer's Field Services: The Painting Contractor shall be responsible to assure the presence of a qualified Technical Representative (approved by a responsible officer of the Material Manufacturer) at the job site prior to starting of the work and as require while the work is in progress. The Technical Representative shall provide assistance to the Painting Contractor in physical demonstrations on the use of the materials and methods or techniques required to accomplish all of the work as specified herein.
- 1. A minimum two (2) visits will be required. The Technical Representative shall submit a detailed report simultaneously to the Contracting Officer and a Responsible Officer of the Painting Contractor and not to the on-site project manager or foremen. This report shall contain in detail the findings, conclusions and recommendations and shall be submitted during each visit. It is the intent of this provision to ensure that the on-site project manager or foreman does not have supervisory rights over the Technical Representative.

### 3.05 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
  - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

### 3.06 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Contracting Officer.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
  - 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

***SPECIFIER'S NOTE: Provide a Color and Finish Schedule as part of the Bidding Documents. Colors selected should not require unnecessary maintenance to present a clean appearance and shall be agreeable with DAGS and the User***

**Agency. Use MPI product numbers to specify the paint system. Use gloss or semi-gloss finishes for interior and exterior work. Confirm proposed deviations with the Project Coordinator. Indicate the required dry mil thickness of the specified paint on the schedule.**

### 3.07 EXTERIOR PAINT SCHEDULE

- A. Concrete, Stucco, and Masonry (Other Than Concrete Unit Masonry): Provide the following finish systems over exterior concrete, stucco, and brick masonry substrates:

**SPECIFIER'S NOTE: Two finish coats over a primer are normally adequate over concrete, stucco, and masonry substrates subject to normal use and moderate environments; however, in some situations, additional coats may be necessary to obtain good coverage. Refer to the Technical Guide for recommendations regarding where alkali resistant primers are required.**

1. Acrylic Finish: Two finish coats over a primer.
  - a. Primer: Exterior concrete and masonry **<alkali resistant>** primer: **[Insert MPI number]**; mils DFT.
  - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]**; mils DFT
  - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

**SPECIFIER'S NOTE: Consider a stain finish over split face masonry units. Confirm with Project Coordinator.**

- B. Concrete Unit Masonry: Provide the following finish systems over exterior concrete unit masonry:
1. Acrylic Finish: Two finish coats over a block filler.
    - a. Block Filler: Concrete unit masonry block filler: **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- C. Exterior Gypsum Soffit Board: Provide the following finish systems over exterior gypsum soffit board:
1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Exterior gypsum soffit board primer. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

**SPECIFIER'S NOTE: Retain paint system in paragraph 3.07.D.1 below for an acrylic finish over exterior wood siding and other smooth exterior wood surfaces, including bleeding woods such as cedar and redwood, subject to normal use and moderate environments. Modify for other finishes.**

- D. Smooth Wood: Provide the following finish systems over smooth wood siding, wood trim, and other smooth exterior wood surfaces:
1. Acrylic Finish: Two finish coats over a primer.

- a. Primer: Exterior wood primer for acrylic enamels. **[Insert MPI number]**; mils DFT.
- b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]**; mils DFT.
- c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

**SPECIFIER'S NOTE: Retain paint system in paragraph 3.07.D.2 below for a full-gloss alkyd-enamel finish over exterior wood trim, including bleeding woods such as cedar and redwood, subject to normal use and moderate environments.**

2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a primer.
  - a. Primer: Exterior wood trim primer for full-gloss alkyd enamels. **[Insert MPI number]**; mils DFT.
  - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]**; mils DFT.
  - c. Finish Coat Gloss Level: full-gloss.

**SPECIFIER'S NOTE: Some types of plywood can be difficult to paint unless properly prepared. Some wood species, particularly fir, absorb most of the resin in the primer unless a sealer is first applied to the surface; however, not all manufacturers recommend using a sealer over plywood. Revise subparagraphs in systems below if none of the manufacturers selected requires a primer over this substrate. Follow manufacturers' written instructions closely when painting plywood. Most manufacturers recommend a minimum of two coats over unpainted plywood subject to normal use and moderate environments regardless of the number of undercoats; however, in some situations, additional coats may be necessary to obtain good coverage.**

- E. Plywood: Provide the following finish systems over exterior plywood:
  1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Exterior wood primer for acrylic enamels. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- F. Ferrous Metal and Copper: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.
  1. Acrylic Finish: Two finish coats over a rust-inhibitive primer.
    - a. Primer: Exterior ferrous-metal primer. **[Insert MPI number]**; mils DFT.
    - b. Finish Coat: Exterior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
  2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a rust-inhibitive primer.
    - a. Primer: Exterior ferrous-metal primer. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]**; mils DFT.

- c. Finish Coat Gloss Level: full-gloss.
- G. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated metal surfaces:
1. Acrylic Finish: Two finish coats over a galvanized metal primer.
    - a. Primer: Exterior galvanized metal primer. **[Insert MPI number]**; mils DFT.
    - b. Finish Coat: Exterior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
  2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a galvanized metal primer.
    - a. Primer: Exterior galvanized metal primer. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: full-gloss.

***SPECIFIER'S NOTE: Most manufacturers recommend two finish coats over a suitable primer over exterior aluminum subject to normal use and moderate environments; however, in some situations, additional coats may be necessary to obtain good coverage.***

- H. Aluminum: Provide the following finish systems over exterior aluminum surfaces:
1. Acrylic-Enamel Finish: Two finish coats over a primer.
    - a. Primer: Exterior aluminum primer under acrylic finishes. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Exterior semigloss acrylic enamel. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

***SPECIFIER'S NOTE: Retain paint system below for a full-gloss alkyd-enamel finish over exterior aluminum subject to normal use and moderate environments.***

2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a primer.
  - a. Primer: Exterior aluminum primer under alkyd finishes. **[Insert MPI number]**; mils DFT.
  - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]**; mils DFT.
  - c. Finish Coat Gloss Level: full-gloss.

### 3.08 INTERIOR PAINT SCHEDULE

- A. Concrete and Masonry (Other Than Concrete Unit Masonry): Provide the following paint systems over interior concrete and brick masonry substrates:
1. Acrylic Finish: Two finish coats over a primer.

- a. Primer: Interior concrete and masonry primer. **[Insert MPI number]**; mils DFT.
  - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]**; mils DFT.
  - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- B. Concrete Unit Masonry: Provide the following finish systems over interior concrete masonry:
- 1. Acrylic Finish: Two finish coats over a block filler.
    - a. Block Filler: Concrete unit masonry block filler**[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- C. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
- 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Interior gypsum board primer. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

**SPECIFIER'S NOTE: Spot prime knots on new wood before applying primer.**

- D. Wood and Hardboard: Provide the following paint finish systems over new interior wood surfaces:
- 1. Acrylic-Enamel Finish: Two finish coats over a primer.
    - a. Primer: Interior wood primer for acrylic-enamel and semigloss alkyd-enamel finishes. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Interior acrylic enamel. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**.
- E. Ferrous Metal: Provide the following finish systems over ferrous metal:
- 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Interior ferrous-metal primer. **[Insert MPI number]**; mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]**; mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**.
- F. Zinc-Coated Metal: Provide the following finish systems over interior zinc-coated metal surfaces:
- 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Interior zinc-coated metal primer. **[Insert MPI number]**; mils DFT.

- b. Finish Coats: Interior acrylic paint. **[Insert MPI number]**; mils DFT.
- c. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**.

**SPECIFIER'S NOTE: To facilitate matching, hardwood surfaces shall be stained before receiving a clear finish. Unless required for a particular application, do not use oil-based paints. This will prevent paint discoloration over time and saponification, a reaction between the oil & alkaline conditions.**

**SPECIFIER'S NOTES: Delete paste wood filler coat in clause 3.09.1.a below for tight-grained wood such as birch or poplar. Retain filler coat for oak and walnut and similar open-grain woods.**

### 3.09 INTERIOR STAIN AND NATURAL-FINISH WOODWORK SCHEDULE

#### A. Waterborne Stain Satin-Varnish Finish:

- 1. Two finish coats of waterborne clear satin varnish over a sealer coat and waterborne interior wood stain.
  - a. Filler Coat: Open-grain wood filler. **[Insert MPI number]**; mils DFT.
  - b. Stain Coat: Interior wood stain. **[Insert MPI number]**.
  - c. Sealer Coat: Clear sanding sealer. **[Insert MPI number]**; mils DFT.
  - d. Finish Coats: Interior waterborne clear gloss varnish. **[Insert MPI number]**; mils DFT.
  - e. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**.

**SPECIFIER'S NOTES: Develop a format for clearly presenting room colors, accent walls, deep shade colors, super graphics, special trim and markings. The following two paragraphs are examples. Program Bells shall be painted "Battleship Gray" and fire bells shall be painted "Fire Engine Red".**

### 3.10 SCHEDULE - COLORS

- A. **[Classroom 201: North, west and east walls - #318 blue. South accent wall - #446 yellow. Paint access panels same as walls. Paint logo - #222 Pink.]**
- B. **[Principal's Office: Walls - #122 Green. Stain wood glazed framed to #333 - honey blond and varnish.]**

END OF SECTION 09901

## SECTION 09902 REPAINTING

### PART 1 - GENERAL

#### 1.01 SUMMARY

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

***SPECIFIER'S NOTE: Modify structures, and surfaces to be painted paragraphs to meet project conditions. Indicate the number of buildings and building designations.***

- B. Structures to be painted:
1. ***[Insert Building(s) Name or description or multiple buildings]*** complete interior and exterior surfaces.
  2. ***[Insert other structures such as complete walkways, flag poles or other miscellaneous structures].***

***SPECIFIER'S NOTE: Show full extent of repainting work on drawings. Add additional surfaces applicable to the project. Modify items to suit field conditions.***

- C. Interior surfaces to be painted: Paint all existing interior painted surfaces including ceilings unless otherwise indicated on the drawings or specifically deleted in this section. Interior surfaces are defined as those surfaces not exposed to weather in an area enclosed by 4 walls, and also a surface painted with a color matching the existing interior color. Do not paint interior surfaces of closets and cabinets with doors unless noted otherwise.
1. Paint both faces, top and side edges of doors and closet doors. Paint both faces and all edges of cabinet doors.
  2. Paint wood vanes of jalousie windows as part of exterior work.
  3. Do not paint movable furniture such as portable bookshelves, cubicles and cabinets unless noted otherwise.
- D. Exterior surfaces to be painted: Paint all existing exterior painted surfaces unless otherwise indicated on the drawings or specifically deleted in this section. Exterior surfaces are defined as those surfaces exposed to weather in an area not enclosed by 4 walls and a roof, and also a surface painted with a color matching the existing exterior color.
1. Paint wood vanes of jalousies windows all surfaces inside and outside as part of exterior work.
  2. Paint both faces, top, bottom and side edges of exterior doors.
  3. Paint bottom and edges of concrete soffits.
  4. Paint soffit and both sides and edges of concrete railing and stairs.
  5. Paint both sides and inside openings of metal grills or mesh.
  6. Paint exposed surfaces of steel pipes and conduits, electric boxes, exhaust ducts, fan housing and similar wall mounted or rooftop appurtenances.
- E. Additional surfaces to be finished:

1. Non Ferrous metals, plated or factory finished items specifically noted to be painted or when such items occur as accessories and appurtenance to surfaces required to be painted.
  2. Exposed mechanical and electrical items **[in areas to be painted]**.
  3. Exterior mechanical and electrical equipment and items on the roof or building exterior.
- F. Substrates and items not to be finished unless indicated otherwise.
1. Concrete floors, paving walks stairs and textured concrete. Other concrete surfaces scheduled not to be painted.
  2. Stone Masonry and masonry scheduled to receive water repellant coatings.
  3. Anodized aluminum, stainless steel, copper and plated metals.
  4. Structural steel and metal elements designated to receive sprayed fireproofing unless such finishes have been UL tested with the designated assembly and are approved by the fireproofing manufacturer.
  5. Finish hardware, unless prime coated.
  6. Glass, plastic laminate, and ceramic tile.
  7. Acoustical ceilings, unless scheduled to be painted.
  8. Integrally colored plaster or EIFS systems.
  9. Flooring and floor coverings.
  10. Plumbing and lighting fixtures, and electrical device plates.
  11. Items with complete factory finishes.

***SPECIFIER'S NOTE: Include appropriate related sections***

1.02 RELATED SECTIONS

- A. Section **[Insert Division 2 section number and title]**: for traffic-marking paint.
- B. Section **[Insert Division 2 section number and title]**: for shop priming structural steel.
- C. Section **[Insert Division 6 section number and title]**: for shop priming architectural woodwork.
- D. Section **[Insert Division 8 section number and title]**: for factory priming steel doors and frames.
- E. Section **[Insert Division 7 or 9 section number and title]**: for elastomeric and other high performance coatings.
- F. Section 09900- Painting: for painting of new surfaces.

- G. Divisions 15 and 16, identification marking of painting of mechanical and electrical equipment and apparatus.

### 1.03 REFERENCES

- A. ASTM D16 - Definition of terms relating to Paint, Varnish, Lacquer and Related Products.
- B. ASTM D2016 - Test Method for Moisture Content of Wood.
- C. MPI (Master Painter's Institute) - Approved Product List.
- D. PCA (Portland Cement Association) - Painting Concrete.
- E. PCDA (Painting and Decorating Contractors of America - Painting - Architectural Specification Manual.
- F. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.

### 1.04 DEFINITIONS

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

### 1.05 SUBMITTALS

- A. Product Data:
  - 1. Materials List: Provide an inclusive list of required patching and coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
    - a) For products with premixed colors, provide manufacturer's standard color chips for selection by Contracting Officer.
  - 2. Manufacturer's Information: Provide data on all listed materials, including:
    - a) Thinning and mixing instructions
    - b) Application instructions and required mil film thicknesses.
    - c) Manufacturer's Material Safety Data Sheets.
- B. Certifications: Provide a letter certifying paints and coatings are free of asbestos, lead, zinc-chromate, strontium chromate, cadmium, and mercury and mercury compounds, crystalline silica and other EPA regulated and hazard materials. Provide a letter certifying the amounts of mildewcide added by both the paint manufacturer and paint supplier. Provide a letter certifying that abrasive blast media are free of crystalline silica.
- C. Schedule of Finishes: Provide finish schedule including paint spread rates required to achieve final dry film thickness indicated in the schedule.
- D. Schedule of Operations: Provide a work schedule showing sequence of operation and installation dates.

***SPECIFIER'S NOTE: Include the following paragraph 1.05.E for submissions of physical samples for selection or approval of finish, color, texture etc. Subparagraph 1.05.E.1 is intended for selecting colors from manufacturer's color***

**chips. Subparagraph 1.05.E.2 is for reviewing colors that have been selected on larger samples. If colors and finishes are preselected, eliminate subparagraph 1.05.E.1 and delete the italicized statement "After color and finish sample are returned" in subparagraph 1.05.E.2. Modify number of paint coats for repainting work.**

- E. Samples:
  - 1. Submit color and finish samples, at manufacturers normal paint chip size illustrating range of colors and textures available for each surface finishing product scheduled.
  - 2. **<After color and finish sample are returned>**, submit paint finish samples, 8.5 inches x 11 inches in size illustrating selected colors and textures for each selection. Divide sample in horizontal strips showing prime and overlapping **<second and finish coats>**. Show coat tinting. Prepare transparent finish samples on same material as that on which coating will be applied. Identify each sample.
- F. Manufacturer's Instructions: Indicate special surface preparation procedures, and substrate conditions requiring special attention. Refer to Part 3 EXAMINATION Section
- G. Provide a Comprehensive Spray Plan when airless spraying is proposed.
- H. Qualification Data: For Applicator.

***SPECIFIER'S NOTE: Include paragraph 1.05.I for DOE School Projects and University Projects.***

- I. Delivery Receipts: Provide 3 copies of the delivery receipt, signed by the user's representative, attesting to delivery of extra paint as required under EXTRA PAINT Section.

***SPECIFIER'S NOTE: Guidance regarding the use of airless spraying should be included in new CIP projects and large renovation projects. Per Central Services' request, do not use airless spraying for small repair projects. Modify the specifications to require application by brush and roller. Confirm requirements with project coordinator.***

#### 1.06 REGULATORY REQUIREMENTS

- A. Comply with State OSHL (Occupancy Safety and Health Law) and pollution controls regulations of the State Department of Health and EPA.

#### 1.07 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
  - 1. Exception: Alkali resistant primers if compatible with the intermediate coat paint products.

***SPECIFIER'S NOTE: Confirm requirement for benchmark samples with Project Coordinator.***

- C. Field Samples (Mockups): Provide a full-coat field sample panel for each type of coating and substrate scheduled in Part 3. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.
  - 1. Contracting Officer will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.
    - a. Wall Surfaces: Provide samples at least 4 feet long by 8 feet high unless indicated otherwise on drawings.
    - b. Small Areas and Items: Contracting Officer will designate items or areas required.
  - 2. Apply benchmark samples, according to requirements for the completed Work. Provide temporary lighting levels similar to permanent lighting conditions for Contracting Officer's evaluation.
    - a. After finishes are accepted, Contracting Officer will use the room or surface to evaluate coating systems of a similar nature.
- D. Comprehensive Spray Plan for Airless Spraying: Where airless spraying is proposed, provide a comprehensive spray plan to include:
  - 1. Documentation that the individual spray applicator(s) on the project have completed an approved spray applicator certification program conducted by the Painting Industry of Hawaii. The certification program shall include material and equipment selection, use and maintenance, hands-on application and safety training.
  - 2. Proposed overspray protection methods.
  - 3. Paint Manufacturer's spray application instructions and recommendations for products to be used.

***SPECIFIER'S NOTE: Include subparagraph 1.07.D.4 for buildings with central air conditioning or ventilation.***

- 4. Proposed schedule to shut-down or covering existing air-conditioning and ventilation equipment and existing air intake, return and diffuser grilles.
- E. In addition, the Contracting Officer shall have the right to require the immediate removal of any paint applicator who demonstrates negligence, lack of competence or repeated non-compliance with the contract requirements.

**1.08 DELIVERY STORAGE AND HANDLING**

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
  - 1. Product name or title of material.
  - 2. Product description (generic classification or binder type).
  - 3. Manufacturer's brand name and lot number and date of manufacture.
  - 4. Contents by volume, for pigment and vehicle constituents.
  - 5. Thinning instructions.

6. Application instructions and coverage.
  7. Color name and number.
  8. VOC content.
- B. Storage
1. Non-flammable Materials: Store materials not in use in tightly covered containers in a well-ventilated area. Maintain storage containers in a clean condition, free of foreign materials.
  2. Flammable Materials: Store in such a manner as to prevent damage. No paint material, empty cans, paint brushes and rollers may be stored in the building(s). Store these items in separate storage facilities away from the building(s). Contractor may furnish a separate job site storage structure, if the structure complies with the requirements of the local Fire Department. Keep the storage area shall clean. Lock any storage structures when not in use or when no visual supervision is possible.
- C. All rejected materials shall be removed from the job site immediately.

#### 1.09 PROJECT CONDITIONS

- A. Do not apply materials when surfaces and ambient temperatures are outside the ranges required by the paint product manufacturer. Do not apply exterior coatings during rain or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- B. Protect public, pedestrians and tenants from injury. Provided, erect and maintain safety barricades around scaffolds, hoists and where construction operations create hazardous conditions.
- C. Completed Work: Provide necessary protection for wet paint surfaces.
- D. Protective Covering and Enclosures: Provide and install clean sanitary drop cloth or plastic sheets to protect furniture, equipment, floor and other areas that are not scheduled for treatment. Remove any paint applied to surfaces not scheduled for treatment.
- E. Fire Safety: Contractor and its employees shall not to smoke in the vicinity of the paint storage area. Exercise precautions against fire at all times and remove waste rags, plastic (polyester sheets), empty cans, and other similar items from the site at the end of each day.
- F. Where airless spraying is used, ensure that protective enclosures are erected to prevent the escape of overspray from the work area.
- G. Safeguarding Property: Safeguard the work and also the property of the State and other individuals in the vicinity of Contractor's work. Make good on any damages and for losses to work or property caused by Contractor or its employee's negligence. Where damaged property cannot be cleaned and restored to its original condition (i.e. prior to being damaged) replace it with a new product of equal quality. No proration or use of "used" products will be permitted.

1. For painting and spray painting operation, assume that cars will not be temporarily relocated from parking areas during the painting operations.

***SPECIFIER'S NOTE: Delete paragraphs 1.09.G.2 and 3 when spray painting is not used.***

2. Paint overspray shall not carry more than 5 l.f. beyond the building eave line nor within 10 l.f. of pedestrians or property and surfaces not scheduled to be painted. Immediately cease spray painting when overspray carries beyond these specified limits. Do not continue until protective barriers are erected to properly contain the overspray and damages caused by the overspray have been corrected.
3. The Contractor shall be assessed \$1000.00 for each incidence of property or personal damage caused by overspray until such time that a satisfactory settlement has been agreed upon by the damaged party and corrective action has been completed. All corrective action shall be settled within 24 hours from the time the damage is discovered. Should the Contractor fail to take corrective action in a timely and expeditious manner, the Contracting Officer shall contact the Contractor's Insurance company to seek resolution on the matter.

***SPECIFIER'S NOTE: Field verify items which must be moved, removed and modify paragraph 1.09.H. Generally, users are responsible to move and reinstall personal and non-furniture items. Verify the extent of work with Project Coordinators.***

H. Incidental work to be performed:

1. Contractor shall move furniture and equipment to provide sufficient work space. Protect furniture and equipment. Replace furniture and equipment to their original locations after completed painting work.
2. Carefully remove and neatly store away or properly protect in-place curtains, blinds and **[define other items]**. Reinstall removed items.
3. **<User shall remove items on shelving and in cabinets prior to painting work.>**

***SPECIFIER'S NOTE: Field verify site conditions. Modify paragraph 1.09.I as required. For security screens, confirm how units are attached and address here or if appropriate in the drawings.. If to be removed, address type of fasteners required.***

- I. Trim back shrubbery and plants shall six inches from surfaces to be painted.
  1. In areas inaccessible to normal painting, remove and reinstall expanded mesh security screens.

***SPECIFIER'S NOTE: For repainting work, modify the number of coats required based on the condition of the existing painted surface. Consultant shall provide adhesive tests verify condition. For example, full priming of the surface is not necessary if the existing paint surface is tight, not chalky and is to be repainted with a paint of similar type and color. For interior surfaces to be repainted in similar color, only one finish coat is required.***

***Compatibility between the new and existing paint is essential. It is the Consultant's responsibility to verify the type of existing paint. If unknown, an appropriate oil-based primer or acrylic primer specifically able to bond to oil***

***based substrate shall be specified. This amends and includes guidance noted in Technical Memorandum #22 dated 8/11/75.***

**1.10 MINIMUM PAINTING WORK**

- A. Unless noted otherwise, minimum interior painting work area shall be the complete inside surfaces of one room. Minimum exterior painting work area shall be one side of a single story building or one side of one story on multiple story buildings.

**1.11 WARRANTY**

- A. Contractor shall provide a two (2) year guarantee that the work performed under this section conforms to the contract requirements and is free of any defect of material or workmanship.

***SPECIFIER'S NOTE: Use this article 1.12 for DOE Schools and University Projects only.***

**1.12 EXTRA MATERIAL**

- A. Provide extra paint in each of the different colors, types and surface textures of exterior and interior paint to the user / school upon completion of the project. Paint shall be in unopened one gallon containers and labeled with color, type, texture, room locations, and date in addition to manufacturer's label.
  - 1. Provide 5 gallons of each color for paint used over large areas, such as the exterior of the building and in several classrooms.
  - 2. Provide 1 gallon of each color for all other areas.

**PART 2 - PRODUCTS**

**2.01 PAINT MATERIALS, GENERAL**

- A. Material Compatibility: Provide block fillers, patching materials, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
  - 1. Proprietary Names: Use of manufacturer's proprietary product names in the Paint Systems Schedule in Part 3 below to designate colors or materials, is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed products to be used.
  - 2. Equivalency: Equivalent products to the specified products are listed in the Master Painter's Institute's "Architectural Painting Specification Manual."
  - 3. Substitution: Requests for substitution of a product or product if a manufacturer is not on the Approved product list will be evaluated for equivalency based on product test results per the test criteria of the Mater Painter's Institute.

- C. Colors: **<match Contracting Officer's samples.> <As indicated by manufacturer's designations as scheduled in Part 3 below.> <As selected by Contracting Officer from manufacturer's full range.>**
- D. ~~EPA Regulated and~~ Hazard Materials: Do not use paint or paint products containing asbestos, lead, mercury or mercury compounds, zinc chromates, strontium-chromate, or cadmium ~~or the EPA regulated or hazard materials.~~ Do not use abrasive blast media that contain crystalline silica.

## 2.02 MISCELLANEOUS MATERIALS

- A. Provide patching and repair materials. Compatible with paint finishes and substrates. Use weather resistant materials for exterior surfaces and surfaces exposed to moisture.
- B. Accessories
1. General: Provide other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
  2. Thinners: Thinning of paint shall be done using material recommended by the manufacturer. Mix proprietary products according to manufacturer's requirements. Do not use compound thinner, mineral oil, kerosene, refined linseed oil, or gasoline for thinning.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application. Comply with procedures specified in PDCA P4.
1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
    - a. Ensure that concrete and masonry surfaces are cured, are within acceptable alkalinity and dried to meet paint manufacturer's recommendations.
    - b. 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 percent.
      - 2) Masonry, Concrete and Concrete masonry units: 12 percent.
      - 3) Interior Wood: 15 percent, measured in accordance with ASTM D2016.
      - 4) Exterior Wood: 15 percent, measured in accordance with ASTM D2016.
    - c. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.

***SPECIFIER'S NOTE: Coordinate primers specified in other Sections with undercoats and finish materials specified in this Section to ensure compatibility of***

**materials. Some finish-coat materials, such as lacquers and epoxies, lift oil and oleoresinous air-dry primers. A long-oil finish coat may crawl and have poor adhesion when used over zinc-dust phenolic or baked primers.**

### 3.02 COORDINATION OF WORK

- A. Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
- B. Notify Contracting Officer about anticipated problems when using the materials specified over substrates primed by others.

### 3.03 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
  - 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

***SPECIFIER'S NOTE: Use specific surface preparation standards such as those established by the Steel Structures Painting Council (SSPC) or the National Association of Corrosion Engineers (NACE) where necessary to address specific project conditions and ensure proper paint adhesion. Require submittal of the referenced standard for use by the Project Inspector to aid checking and acceptance of the surface preparation.***

- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
  - 1. General: Correct defects and clean surfaces which affect work of this section. Remove existing coatings that exhibit loose surface defects.
    - a. Provide barrier coats over marks, patches, and other imperfections which may bleed through surface finish.
    - b. Remove from surfaces to be repainted all foreign matter such as nails, screws, staples, tape and gum.
    - c. Remove all loose, blistered, scaled, crazed or chalky finish to an existing tight and firm finish.
    - d. Remove mildew as noted in PREPARATION Article.
    - e. Spot prime areas where bare wood, concrete, masonry, plaster, fill, seal or patched material is exposed with the specified primer and feather out onto adjacent paint.
  - 2. Wash all surfaces with a solution of tri-sodium phosphate and water or other appropriate solution to remove any accumulated film of wax, oil, grease,

smoke, dust, dirt, chalking or other foreign matter which would impair the bond of, or bleed through the new paint finish. After washing, rinse the surface with potable water and allow to thoroughly dry. Rinsing may be performed by high pressure water washing as noted in PREPARATION Article.

- a. Surfaces shall dry a minimum of 24 hours before the application of primers. For wood surfaces drying shall continue until the moisture content of the wood is less than 15 percent. For concrete and concrete masonry surfaces test for alkali and moisture.
3. Lightly sand the surface where existing finish remains tight and firm. Where the paint has been removed, sand the edges of scarred areas to a smooth feathered edge.
  4. Fill holes (nail, tack, staple, and other similar items), cracks, open joints and other imperfections with appropriate compound and allow to set (door and trim included). Seal all openings which will permit the entrance of water. Sealing compounds shall be compatible with the substrate, primer and paint. Apply and allow sealants to set in accordance with the manufacturer's recommendations.
  5. Cementitious Materials: Seal all cracks hairline to 1/8 inch in width with concrete patching compound. All cracks over 1/8 inch in width and holes 1/4 inch diameter or greater shall be sealed with a latex modified or epoxy modified reinforced patching system before paint application. All patching shall be done in accordance with the patching manufacturer's recommendations and instructions. All patching shall be done in accordance with the manufacturer's recommendations and instructions. Apply texture, if required, to match existing textured surfaces.
    - a. Concrete Floors: Remove contamination, acid etch, neutralize and rinse floors with clean water. Verify required acid-alkalai balance is achieved. Allow to dry.
  6. Plaster Surfaces: Scarred plaster areas shall be patched with appropriate plaster materials. Fill holes, cracks, open joints and damaged areas with vinyl base or latex modified patching system. Apply texture, if required, to match existing textured surfaces.
  7. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
  8. Wood:
    - a. Interior: Wipe off dust and grit prior to sealing.
    - b. Exterior: Wash glu-laminated wood with solvent to remove grease and dirt prior to sealing.
    - c. Seal knots, pitch streaks, and sappy sections with sealer. Fill fastener holes and cracks after priming has dried; sand between coats.
  9. Ferrous and Galvanized Metal Surfaces:
    - a. Comply with preparation requirements of the Steel Structures Painting Council (SSPC) Standard SP3.

- b. Remove rust, loose mill scale and blistering / loose paint by power tool chipping, de-scaling, sanding, wire brushing and grinding down to bare metal. Only tightly adhering surface rust, mill scale and paint which cannot be removed with a dull putty knife may remaining. Do not burnish the surfaces during cleaning.
  - c. Completely wipe surfaces with mineral spirits or other appropriate solution to remove accumulated film of wax, oil, grease, smoke, dust, dirt, chalky or other foreign matter which would impair the bond of, or bleed through the new paint finish. Patch imperfections, holes, dents to form a smooth surface.
  - d. Lightly sand the surface where existing finish remains tight and firm. Where the paint has been removed, sand the edges of scarred areas to a smooth feathered edge. Allow the surfaces to thoroughly dry and immediately spot prime bare metal areas with the specified primer and feather out onto adjacent paint.
10. Aluminum Surfaces Scheduled for Paint Finish:
- a. Remove surface contamination by steam or high pressure wash.
  - b. Remove oxidation with acid etch and solvent washing.
  - c. Apply etching primer immediately following cleaning.
11. Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish:
- a. Remove foreign particles to permit adhesion of finishing material.
  - b. Apply compatible sealer or primer.
12. Insulated Coverings: Remove dirt, grease, and oil from covering material.
13. Copper Surfaces Scheduled for Paint Finish:
- a. Remove contamination by steam, high pressure wash, or solvent clean.
  - b. Apply vinyl etch primer immediately following cleaning.
14. Copper surfaces scheduled for Natural Oxidized Finish:
- a. Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid.
  - b. Rub on repeatedly for required effect. Once attained, rinse surface with clear water and allow to dry.
- D. High Pressure Water Washing Preparation:
- 1. High pressure water washing may be used in lieu of brush washing to remove loose paint material, chalking, dirt, and debris from exterior wood, concrete and masonry surfaces to be painted. Use skilled mechanics experienced in the use and operation of the sprayer equipment.

2. High pressure water washing does not replace proper preparatory work such as sanding of the substrate prior to painting. Remove surface contaminants and loose paint material remaining after pressure washing by other means.
  3. Ensure the pressure rating of the sprayer equipment will not damage the substrate. Ensure the nozzle type and size is appropriate to clean the surface without damaging the substrate. Restore or repair any damage surfaces to its original condition.
  4. Take precautions prevent over-spray and water infiltration into the building through doors, windows, vents, louvers, cracks and other building openings. Seal openings. Immediately clean water and debris that entered the building. Restore or repair any damage surfaces to its original condition.
  5. For mildew removal, use high pressure washing only to wash the surface after it has first been sterilized with a mildew treatment solution.
- E. Mildew Removal Preparation:
1. Remove mildew and sterilize the surface to be painted using one of the following methods:
    - a. Apply a commercial mildew remover applied per manufacturer's instructions.
  2. Following treatment, clean the surface with potable water and allow to thoroughly dry before priming, painting or applying sealing and caulking compounds.
- F. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
  2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
  3. Use only thinners approved by paint manufacturer and only within recommended limits.
  4. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

***SPECIFIER'S NOTE: Revise this Article to suit Project, and, if required, add special restrictions on application methods.***

#### 3.04 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.

2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
  3. Provide finish coats that are compatible with primers used.
  4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, covers, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
  5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only, unless otherwise noted.
  6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
  7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
  8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
  9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
  10. Sand lightly between each succeeding enamel or varnish coat.
  11. Ensure primers are top coated within the times required by the paint manufacturers. Top coats not applied within the recoating window may be rejected.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
  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. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
  3. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

4. Be aware of the requirements and restrictions of PROJECT CONDITIONS Article on spray painting.

***SPECIFIER'S NOTE: Delete spray application in paragraph 3.04.C below if prohibited on job site. Spray application of paints can damage sensitive electronic operating equipment and might cause problems for personnel in occupied buildings.***

- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
  1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
  2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
  3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

***SPECIFIER'S NOTE: Paragraph 3.04.E below is an example of painting requirements for mechanical and electrical work. Revise paragraphs 3.04.E thru 3.04.G to suit Project. Differentiate factory prime and finish coats in the respective Mechanical and Electrical sections of this Specification.***

- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- F. Mechanical items to be painted include, but are not limited to, the following:
  1. Uninsulated metal piping.
  2. Uninsulated plastic piping.
  3. Pipe hangers and supports.
  4. Tanks that do not have factory-applied final finishes.
  5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
  6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
  7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
  8. ***[Insert mechanical items to be painted.]***
- G. Electrical items to be painted include, but are not limited to, the following:
  1. Switchgear.

2. Panelboards.
  3. Electrical equipment that is indicated to have a factory-primed finish for field painting.
  4. ***[Insert electrical items to be painted.]***
- H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- I. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
1. Provide satin finish for final coats.
  2. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.
- L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

***SPECIFIER'S NOTE: On projects requiring painting of large surface areas, such as building exteriors, alkalinity and adhesion testing shall be performed by either a NACE certified inspector or an independent testing laboratory. On projects with minor painting work, testing shall be performed by contractor's quality control manager.***

### 3.05 FIELD QUALITY CONTROL TESTING

- A. Inspection and Approvals: Unless directed otherwise by the Contracting Officer, obtain written approval upon completion of each phase of work (phases of work are: surface preparation and spot prime, prime, first finish coat, second finish coat) before proceeding into the next phase or work. For any particular area of work that deviates from the submitted work schedule, notify the Contracting Officer one day in advance when completing any phase of work. Provide access to areas to be inspected.
- B. Failure to obtain approval of any phase of work for a work area may result in redoing the operation at no cost to the State.
- C. Right of Rejection: Non conforming work will be rejected by the Contracting Officer. Remove rejected material from the job site immediately. Redo rejected work at no cost to the State.

1. Where the required paint thickness is deficient, provide additional coats to the affected surface(s) to meet the required paint thickness.
- D. The Contracting Officer will require all paints and their applied thickness tested to determine compliance with the Contract Documents. The State will select a laboratory, and the cost of testing shall be borne by the Contractor. Provide adhesion testing between each scheduled paint coat. Should test fail, remove paint, prepare surfaces, recoat, then test again.
1. Where the required paint thickness is deficient, provide additional coats to the affected surface(s) to meet the required paint thickness.
  2. Test schedule: ***[Insert number and locations of required tests]***
  3. Tests shall be paid by Contractor and shall be performed by ***[Insert tester]***.
- F. Independent Coating Inspector: Employ independent coating inspector(s) from one of the approved agencies listed in Section 01400 – Quality Requirements (hereafter referred to as “coating inspectors”) to assure the quality of work at all times. Employ adequate coating inspectors to properly verify and approve the work in progress. It is the responsibility of the General Contractor to provide sufficient coating inspection personnel.
1. The coating inspector(s) shall not report to the on-site project manager or foreman. He shall report to the Contracting Officer. It is the intent of this provision to make sure the individual(s) in direct control of production do not have supervisory rights over the coating inspector(s).
  2. The coating inspector(s) shall have 10 years cumulative experience. It is the intent of this provision to make sure that the inspection team is properly supervised and that an experienced team of inspectors is provided to the State.
  3. The independent coating inspection agency shall at a minimum have the following inspection equipment on site and in good working order.
    - a. Two – Positector 2000 or other approved electronic dry film thickness gages.
    - b. Two – Sling Psychrometers.
    - c. \_\_\_\_\_ Replica Tape and Spring Micrometer.
    - d. One – Tooke Gage.
    - e. One - \_\_\_\_\_ Pull-off Gage.
    - f. Two – Surface Temperature Thermometers.
    - g. One – Low Voltage Holiday Tester.
    - h. One – Dwyer Model #400 Manometer.
    - i. Two – Industrial Quality Flashlights.
    - j. One - #2 Zahl Cup.

- k. One - #4 Zahl Cup
  - l. One – 35mm camera capable of automatically labeling the photos with the day and time the photo was taken.
4. The coating inspector(s) are required to thoroughly document the progress, general quality of the work, and any non-compliant work with photographs.
  5. The coating inspector(s) shall submit inspection reports and any type of deficiency reports to the Contracting Officer and Contractor simultaneously. This shall be done daily in a manner agreed to by the Contracting Officer, the coating inspector(s), and the Contractor. Reports and any non-compliance notice shall be sent by fax to the agency's home office and to the Contracting Officer each day.
  6. The coating inspector(s) office shall be located in the Contracting Officer's field office.
  7. The Contractor shall not proceed with the next phase of work for each member to be painted until receiving approval from the coating inspector(s) for the following items of work:
    - a. Grinding of sharp corners and welds.
    - b. Blasted surface, including cleaning.
    - c. Blow-down and vacuuming completed prior to any painting operation within containment.
    - d. Primer thickness.
    - e. Complete abrasive removal from each contained area before proceeding with the application of intermediate coat.
    - f. Dry spray and abrasive removal from primer.
    - g. Intermediate coat thickness.
    - h. Dry spray removal from intermediate coat.
- G. Manufacturer's Field Services: The Painting Contractor shall be responsible to assure the presence of a qualified Technical Representative (approved by a responsible officer of the Material Manufacturer) at the job site prior to starting of the work and as required while the work is in progress. The Technical Representative shall provide assistance to the Painting Contractor in physical demonstrations on the use of the materials and methods or techniques required to accomplish all of the work as specified herein.
1. A minimum two (2) visits will be required. The Technical Representative shall submit a detailed report simultaneously to the Contracting Officer and a Responsible Officer of the Painting Contractor and not to the on-site project manager or foremen. This report shall contain in detail the findings, conclusions and recommendations and shall be submitted during each visit.

It is the intent of this provision to ensure that the on-site project manager or foreman does not have supervisory rights over the Technical Representative.

### 3.06 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
  - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

### 3.07 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Contracting Officer.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
  - 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

***SPECIFIER'S NOTE: Provide a Color and Finish Schedule as part of the Bidding Documents. Colors selected should not require unnecessary maintenance to present a clean appearance and shall be agreeable with DAGS and the User Agency. Use gloss or semi-gloss finishes for interior and exterior work. Do not use flat finishes unless approved by DAGS Central Services Division. Confirm finished with the Project coordinator. Indicate the required dry mil thickness of the specified paint on the schedule. Make sure the paints selected are on the MPI approved product list.***

### 3.08 EXTERIOR PAINT SCHEDULE

- A. Concrete, Stucco, and Masonry (Other Than Concrete Unit Masonry): Provide the following finish systems over exterior concrete, stucco, and brick masonry substrates:

***SPECIFIER'S NOTE: Two finish coats over a primer are normally adequate over concrete, stucco, and masonry substrates subject to normal use and moderate environments; however, in some situations, additional coats may be necessary to obtain good coverage. Refer to the Technical Guide for recommendations regarding where alkali resistant primers are required.***

- 1. Acrylic Finish: Two finish coats over a primer.
  - a. Primer: Exterior concrete and masonry **<alkali resistant>** primer: **[Insert MPI number]** mils DFT.
  - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]** mils DFT.
  - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

***SPECIFIER'S NOTE: Consider a stain finish over split face masonry units. Confirm with Project Coordinator.***

- B. Concrete Unit Masonry: Provide the following finish systems over exterior concrete unit masonry:
  - 1. Acrylic Finish: Two finish coats over a block filler.

- a. Block Filler: Concrete unit masonry block filler: **[Insert MPI number]** mils DFT.
  - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]** mils DFT.
  - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- C. Exterior Gypsum Soffit Board: Provide the following finish systems over exterior gypsum soffit board:
- 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Exterior gypsum soffit board primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

***SPECIFIER'S NOTE: Retain paint system in subparagraph 3.08.D.1 below for an acrylic finish over exterior wood siding and other smooth exterior wood surfaces, including bleeding woods such as cedar and redwood, subject to normal use and moderate environments. Modify for other finishes.***

- D. Smooth Wood: Provide the following finish systems over smooth wood siding, wood trim, and other smooth exterior wood surfaces:
- 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Exterior wood primer for acrylic enamels. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

***SPECIFIER'S NOTE: Retain paint system in subparagraph 3.08.D.2 below for a full-gloss alkyd-enamel finish over exterior wood trim, including bleeding woods such as cedar and redwood, subject to normal use and moderate environments.***

- 2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a primer.
  - a. Primer: Exterior wood trim primer for full-gloss alkyd enamels. **[Insert MPI number]** mils DFT.
  - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]** mils DFT.
  - c. Finish Coat Gloss Level: full-gloss.

***SPECIFIER'S NOTE: Some types of plywood can be difficult to paint unless properly prepared. Some wood species, particularly fir, absorb most of the resin in the primer unless a sealer is first applied to the surface; however, not all manufacturers recommend using a sealer over plywood. Revise subparagraphs in systems below if none of the manufacturers selected requires a primer over this substrate. Follow manufacturers' written instructions closely when painting plywood. Most manufacturers recommend a minimum of two coats over unpainted plywood subject to normal use and moderate environments regardless of the number of undercoats; however, in some situations, additional coats may be necessary to obtain good coverage.***

- E. Plywood: Provide the following finish systems over exterior plywood:
1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Exterior wood primer for acrylic enamels. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Exterior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- F. Ferrous Metal and Copper: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.
1. Acrylic Finish: Two finish coats over a rust-inhibitive primer.
    - a. Primer: Exterior ferrous-metal primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coat: Exterior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
  2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a rust-inhibitive primer.
    - a. Primer: Exterior ferrous-metal primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: full-gloss.
- G. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated metal surfaces:
1. Acrylic Finish: Two finish coats over a galvanized metal primer.
    - a. Primer: Exterior galvanized metal primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coat: Exterior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
  2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a galvanized metal primer.
    - a. Primer: Exterior galvanized metal primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: full-gloss.

***SPECIFIER'S NOTE: Most manufacturers recommend two finish coats over a suitable primer over exterior aluminum subject to normal use and moderate environments; however, in some situations, additional coats may be necessary to obtain good coverage.***

- H. Aluminum: Provide the following finish systems over exterior aluminum surfaces:
1. Acrylic-Enamel Finish: Two finish coats over a primer.

- a. Primer: Exterior aluminum primer under acrylic finishes. **[Insert MPI number]** mils DFT.
- b. Finish Coats: Exterior semigloss acrylic enamel. **[Insert MPI number]** mils DFT.
- c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

**SPECIFIER'S NOTE: Retain paint system below for a full-gloss alkyd-enamel finish over exterior aluminum subject to normal use and moderate environments.**

- 2. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a primer.
  - a. Primer: Exterior aluminum primer under alkyd finishes. **[Insert MPI number]** mils DFT.
  - b. Finish Coats: Exterior full-gloss alkyd enamel. **[Insert MPI number]** mils DFT.
  - c. Finish Coat Gloss Level: full-gloss.

### 3.09 INTERIOR PAINT SCHEDULE

- A. Concrete and Masonry (Other Than Concrete Unit Masonry): Provide the following paint systems over interior concrete and brick masonry substrates:
  - 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Interior concrete and masonry primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- B. Concrete Unit Masonry: Provide the following finish systems over interior concrete masonry:
  - 1. Acrylic Finish: Two finish coats over a block filler.
    - a. Block Filler: Concrete unit masonry block filler. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.
- C. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
  - 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Interior gypsum board primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss>**.

**SPECIFIER'S NOTE: Spot prime knots on new wood before applying primer.**

- D. Wood and Hardboard: Provide the following paint finish systems over new interior wood surfaces:
  - 1. Acrylic-Enamel Finish: Two finish coats over a primer.

- a. Primer: Interior wood primer for acrylic-enamel and semigloss alkyd-enamel finishes. **[Insert MPI number]** mils DFT.
  - b. Finish Coats: Interior acrylic enamel. **[Insert MPI number]** mils DFT.
  - c. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**.
- E. Ferrous Metal: Provide the following finish systems over ferrous metal.
- 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Interior ferrous-metal primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**
- F. Zinc-Coated Metal: Provide the following finish systems over interior zinc-coated metal surfaces:
- 1. Acrylic Finish: Two finish coats over a primer.
    - a. Primer: Interior zinc-coated metal primer. **[Insert MPI number]** mils DFT.
    - b. Finish Coats: Interior acrylic paint. **[Insert MPI number]** mils DFT.
    - c. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**.

***SPECIFIER'S NOTE: To facilitate matching, hardwood surfaces shall be stained before receiving a clear finish. Unless required for a particular application, do not use oil-based paints. This will prevent paint discoloration over time and saponification, a reaction between the oil & alkaline conditions. For projects on the Big Island, provide alkali resistant primers.***

### 3.10 INTERIOR STAIN AND NATURAL-FINISH WOODWORK SCHEDULE

- A. Waterborne Stain Satin-Varnish Finish:
  - 1. Two finish coats of waterborne clear satin varnish over a sealer coat and waterborne interior wood stain.

***SPECIFIER'S NOTES: Delete paste wood filler coat below for tight-grained wood such as birch or poplar. Retain filler coat for oak and walnut and similar open-grain woods.***

- a. Filler Coat: Open-grain wood filler. **[Insert MPI number]** mils DFT.
- b. Stain Coat: Interior wood stain. **[Insert MPI number]**.
- c. Sealer Coat: Clear sanding sealer. **[Insert MPI number]** mils DFT.
- d. Finish Coats: Interior waterborne clear gloss varnish. **[Insert MPI number]** mils DFT.
- e. Finish Coat Gloss Level: **<low-luster><semi-gloss><full-gloss>**.

***SPECIFIER'S NOTES: Develop a format for clearly presenting room colors, accent walls, deep shade colors, super graphics, special trim and markings. The following two paragraphs 3.11.A & B are examples. Program Bells shall be painted "Battleship Gray" and fire bells shall be painted "Fire Engine Red."***

### 3.11 SCHEDULE - COLORS

- A. *[Classroom 201: North, west and east walls - #318 blue. South accent wall - #446 yellow. Paint access panels same as walls. Paint logo - #222 Pink.]*
- B. *[Principal's Office: Walls - #122 Green. Stain wood glazed framed to #333 - honey blond and varnish.]*

END OF SECTION 09902