

## **1. GENERAL**

### **1.1 References**

- .1 Master Painters Institute (MPI)
  - .1 MPI Architectural Painting Specification Manual.
  - .2 MPI Approved Product List.
  - .3 MPI Green Performance Standard (GPS 1 & GPS 2)

### **1.2 Work**

- .1 Finish painting defined under this Section is to specify the general requirements of the Work and is applicable to items not covered under other Sections of this Specification.

### **1.3 Quality Assurance/Submittals**

- .1 Submit samples in accordance with Section E4 –Shop Drawings.
- .2 Perform painting Work by applicator with minimum five (5) years of proven, satisfactory and successful painting experience on projects of similar size and nature. Provide qualified crew of painters and full time review of Work by qualified supervisor for duration of Work.
- .3 Submit in writing list of proposed materials, for approval at least six (6) weeks before materials are required. List shall contain following for record:
  - .1 Manufacturer's product number, Master Paint Institute (MPI) Product Index Number and application instructions.
  - .2 Finish formula.
  - .3 Product type.
  - .4 Colour number.
  - .5 Maximum VOC classification.
  - .6 Ecologo certification where applicable.
- .4 Samples: Submit at least four (4) weeks prior to painting Work commencing at the Site, two (2) identified (with Project Name, the finish, colour name and number, sheen and gloss values) samples of the following:
  - .1 Each colour in each finish coat material on minimum 150 mm x 300 mm coated stock card.

### **1.4 Environmental Requirements**

- .1 Ventilate area of Work by use of portable supply and exhaust fans. Provide continuous ventilation during and after application of paint. Run ventilation system twenty-four (24) hours per day during installation; provide continuous ventilation for seven (7) days after

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completion of application of paint. Apply paint finishes only when temperature at location of installation can be satisfactorily maintained within Manufacturer's recommendations. Substrate and ambient temperature shall be within limits prescribed by Manufacturer.

- .2 Provide heating to maintain minimum temperatures recommended by Manufacturer's.
- .3 Apply paint finish only in areas where dust is no longer being generated by related construction operations such that airborne particles will not affect the quality of the finished surface. Apply paint only when surface to be painted is dry, properly cured and adequately prepared.
- .4 Protect floors by means of tarpaulins and metal pans.

### **1.5 Painting and Finishing Work Standards**

- .1 Adhere to practices specified or recommended in MPI Architectural Painting Specification Manual for painting methods and procedures, unless specified otherwise in this Section.

### **1.6 Colour Selections**

- .1 Provide two (2) different top coat colours for each individual Room.
- .2 Provide two (2) different top coat colours for each exterior and interior Steel Door and Frame.
- .3 The Contract Administrator will issue a schedule indicating colour(s), colour locations, gloss value and sheen. Colour may be selected from an unlimited number of colours, gloss and sheen.

### **1.7 Maintenance Data**

- .1 Provide operation and maintenance data for each formula for incorporation into maintenance manual specified in Section 01 78 00 – Closeout Submittals.

## **2. PRODUCTS**

### **2.1 Painting, Finishing, and Coating Products**

- .1 Only materials (primers, paints, coatings, fillers, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use at this Site unless specifically noted in the schedule of Paint Formulas. All such material shall be from a single manufacturer for each system used.
- .2 Design is based on ICI Dulux/Glidden and Carboline Coatings.
- .3 Equivalent manufacturers for utilizing the same MPI Product Index Number as the ICI Dulux/Glidden design standard are the following:
  - .1 Sherwin Williams.
  - .2 Benjamin Moore.
  - .3 Pittsburgh Paints.

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- .4 Finishing products such as oils or putties not specified in this Section are to be premium quality and as recommended by the Manufacturer of the paint or finish product it is associated with.
  - .5 On walls no defects shall be visible from a distance of 1,000 mm at 90° to surface. On ceilings no defects shall be visible from floor to surface when viewed using final lighting source. Final coat shall exhibit uniformity of colour and uniformity of sheen across full surface area.

### **3. EXECUTION**

#### **3.1 Protection**

- .1 Cover or mask surfaces adjacent to those receiving treatment and finishing to protect the Work of others from damage and soil. Mask instruction and specification plates and controls attached to equipment being painted. Mask fire rating labels on doors and frames.
- .2 Coordinate with the appropriate trades for the removal from finished surfaces, storage and reinstallation after finish Work is completed of finish hardware, switch and receptacle plates, escutcheons, luminarie frames, and similar items.

#### **3.2 Preparation of Surfaces**

- .1 General
  - .1 Vacuum clean areas inside the building(s) immediately prior to commencing finishing Work.
  - .2 Arrange for finishing hardware, electrical plates, accessories, and similar removable fittings on surfaces to be finished to be removed. Mask any other Work that is not removable.
- .2 Cleaning Procedures
  - .1 Surface preparation methods shall remove any contaminant that will interfere with full adhesion of protective painting and coating systems.

#### **3.3 General Application of Paint and Finishes**

- .1 Maintain at the Site at all times until the Work is completed, a moisture meter, hygrometer, and thermometer to verify surface and environmental conditions.
- .2 Make clean, true junctions with no overlap between adjoining applications of finish coatings.
- .3 Unless otherwise specified, DO NOT apply paint or finish to the following:
  - .1 Finishing hardware.
  - .2 Equipment nameplates and other such identification.
  - .3 Switch, receptacle and other electrical device faceplates.
  - .4 Exposed copper, brass, plastic, acrylic and FRP unless otherwise specified.
  - .5 Lighting fixtures.

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- .6 Stainless steel except for stainless steel doors and frames.
  - .7 Chrome plated surfaces, and polished or lacquered brass or bronze surfaces.
  - .8 Surfaces factory coated with baked epoxy or enamel.
  - .9 Plastic laminate surfaces.
  - .10 Manhole and catch basin covers.
  - .11 Covers or strainers associated with floor drains, cleanout terminations, and similar equipment.
  - .12 Recessed electrical boxes and similar recessed equipment.
  - .13 Exterior poured concrete and masonry surfaces.
  - .14 Valve handles.
  - .15 Control panels.
  - .16 Electrical panels.
  - .17 Circuit breakers, switches, receptacles, and similar electrical devices.
  - .18 Exterior sealant joints.
  - .19 Pre-finished sheet metal flashing.
  - .20 Pre-finished exterior wall louvres.
  - .21 Pre-finished exterior metal soffit.
  - .22 Fire rating labels on doors and frames.

### **3.4 Paint Formula:**

- .1 Apply paint to surfaces with the following:
  - .1 All interior concrete block and interior cast vertical concrete curbs:
    - .1 One (1) coat Dulux X-Pert Interior Latex Block Filler (36250) at 178 $\mu$  DFT.
    - .2 Minimum of two (2) coats Dulux Diamond Interior Acrylic Eggshell (14220). Each coat at 25 $\mu$  DFT per coat.
  - .2 All interior Steel Doors and Frames except as noted below:
    - .1 Minimum preparation: SSPC-1.
    - .2 One (1) coat Dulux X-Pert Gripper (250) at 46 $\mu$  - 50 $\mu$  DFT.
    - .3 Minimum of two (2) coats Dulux Diamond Interior Acrylic Eggshell (14220). Each coat at 25 $\mu$  DFT per coat.

- .3 All exterior Steel Doors and Frames:
  - .1 Minimum preparation: SSPC-1.
  - .2 One (1) coat Dulux X-Pert Gripper (250) at 46 $\mu$  - 50 $\mu$  DFT.
  - .3 Minimum of two (2) coats Dulux Diamond Exterior Latex Semi-gloss (1650.501). Each coat at 30 $\mu$  DFT per coat.
  
- .4 Galvanized Bollards
  - .1 Minimum preparation: SSPC-1.
  - .2 Two (2) coats Dulux X-Pert Gripper (250) at 46 $\mu$  - 50 $\mu$  DFT per coat.
  - .3 Minimum of two (2) coats Dulux Diamond Exterior Latex Semi-gloss (1650.501). Each coat at 30 $\mu$  DFT per coat. Colour: Safety Yellow.

**END OF SECTION**

**1. GENERAL**

**1.1 References:**

- .1 Master Painters Institute (MPI):
  - .1 MPI Green Performance Standard GPS-1
  - .2 MPI Green Performance Standard MPI GPS-2 for Standard Category: Industrial Maintenance Coatings
  - .3 RG (OTC or EC), Environment Canada's VOC requirements
  - .4 MPI # 205, Graffiti Protection Top-Coat - for Unpainted Concrete

**1.2 Work**

- .1 Graffiti Resistant coatings for exterior wall surfaces including:
  - .1 CMU Veneer
  - .2 Dimensional Stone Veneer
  - .3 Dimensional Stone Ledge Sill
  - .4 CFI Wall Board

**1.3 Quality Assurance/Submittals**

- .1 Submit samples in accordance with Section E4 –Shop Drawings.
- .2 Perform coating Work by applicator with minimum five (5) years of proven, satisfactory and successful coating experience on projects of similar size and nature. Provide qualified crew of painters and full time review of Work by qualified supervisor for duration of Work.
- .3 Submit in writing list of proposed materials, for approval at least six (6) weeks before materials are required. List shall contain following for record:
  - .1 Manufacturer's product number, Master Paint Institute (MPI) Product Index Number and application instructions.
  - .2 Finish formula.
  - .3 Product type.
  - .4 Colour number.
  - .5 Maximum VOC classification.
  - .6 Ecologo certification where applicable.
  - .7 MSDS Data Sheets

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.8 Application Instructions

- .4 Field Sample: Apply Graffiti Resistant Coating to field mock-up sample representing exterior wall surface to be coated. Apply coating system over a minimum 1 m x 1 m test area and test removal of applied spray paint in presence of Contract Administrator and The City for approval using removal methods recommended by the manufacturer.

**1.4 Environmental Requirements**

- .1 Ventilate area of Work by use of portable supply and exhaust fans. Provide continuous ventilation during and after application of Graffiti Resistant Coating. Run ventilation system twenty-four (24) hours per day during installation; provide continuous ventilation for seven (7) days after completion of application of paint. Apply paint finishes only when temperature at location of installation can be satisfactorily maintained within Manufacturer's recommendations. Substrate and ambient temperature shall be within limits prescribed by Manufacturer.
- .2 Provide heating to maintain minimum temperatures recommended by Manufacturer's.
- .3 Apply Graffiti Resistant Coating only in areas where dust is no longer being generated by related construction operations such that airborne particles will not affect the quality of the finished surface. Apply Graffiti Resistant Coating only when surface to be coated is dry, properly cured and adequately prepared.
- .4 Protect floors by means of tarpaulins and metal pans.

**1.5 Maintenance Data**

- .1 Provide operation and maintenance data for the Graffiti Resistant Coating for incorporation into maintenance manual specified in Section 01 78 00 – Closeout Submittals.

**1.6 Warranty**

- .1 Provide manufacturers written warranty guaranteeing effective graffiti removal for not less than two (2) years and warrant that treated surfaces can be effectively and repeatedly cleaned of graffiti without damage or loss of effectiveness of the Graffiti Resistant Coating. Manufacturer shall, for the duration of the warranty period, guarantee replacement of product and labor to remove graffiti and replace graffiti resistant coating where graffiti has shown to be ineffective.

**2. PRODUCTS**

**2.1 Graffiti Resistant Coating Products**

- .1 Only materials (primers, paints, coatings, fillers, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use at this Site. All such material shall be from a single manufacturer for each system used.
- .2 MPI #205 Graffiti Protection Top-Coat – for Unpainted Concrete
  - .1 Genesis Coatings – Genesis Coatings – Polyurethane Anti-Graffiti and General Maintenance Topcoat

### **3. EXECUTION**

#### **3.1 Protection**

- .1 Cover or mask surfaces adjacent to those receiving treatment and finishing to protect the Work of others from damage and soil. Mask instruction and specification plates and controls attached to equipment being painted. Mask fire rating labels on doors and frames.
- .2 Coordinate with the appropriate trades for the removal from finished surfaces, storage and reinstallation after finish Work is completed of finish hardware, switch and receptacle plates, escutcheons, luminarie frames, and similar items.

#### **3.2 Preparation of Surfaces**

##### **.1 General**

- .1 Clean surfaces as recommended by manufacture.
- .2 Arrange for finishing hardware, electrical plates, accessories, and similar removable fittings on surfaces to be finished to be removed. Mask any other Work that is not removable.

##### **.2 Cleaning Procedures**

- .1 Surface preparation methods shall remove any contaminant that will interfere with full adhesion of protective painting and coating systems.

##### **.3 Sealing**

- .1 Seal surfaces per manufactures recommendations prior to coating.

#### **3.3 General Application of Graffiti Resistant Coating**

- .1 Maintain at the Site at all times until the Work is completed, a moisture meter, hygrometer, and thermometer to verify surface and environmental conditions.
- .2 Make clean, true junctions with no overlap between adjoining applications of finish coatings.

**END OF SECTION**



## **1. GENERAL**

### **1.1 References**

- .1 ASTM International (ASTM)
  - .1 ASTM D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.

### **1.2 Work Included**

- .1 Supply and installation of specialty coatings for concrete used on the liquid retaining side of structures.
- .2 Supply and installation of specialty coatings for concrete used for other areas as indicated on the Drawings and/or listed below.

### **1.3 Design Standards, Code Requirements**

- .1 Conform to requirements of Steel Structures Painting Council (SSPC) Publications, explanatory notes, comments and appendixes:
  - .1 SSPC-SP-13 Surface Preparation of Concrete.
- .2 Concrete profile to: International Concrete Repair Institute (ICRI) visual standards.

### **1.4 Submittals**

- .1 Submit Shop Drawings in accordance with Section E4 - Shop Drawings.
- .2 Submit colour samples of coating, minimum colour sample size 50 mm x 100 mm. Colour to be chosen by Departmental Representative from manufacturer's standard colour chart.
- .3 Indicate location of where the specific coating is to be applied.
- .4 Submit Manufacturer's product data sheets and installation guides. A minimum of one (1) copy of the reviewed product data sheets and installation guides shall remain on-site at all times for all to view.

### **1.5 Maintenance Data**

- .1 Provide maintenance data for coatings complete with pertinent details, data sheets, and warnings against harmful maintenance materials and practices for incorporation into maintenance manual.

## **2. PRODUCTS**

### **2.1 General**

- .1 The same manufacture is to be used for the entire project.
- .2 Abbreviations; P = primer, I = intermediate coat, TC = tack coat, SC = saturant coat and F = finish coat, DFT = dry film thickness, WFT = wet film thickness.

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- .3 Coating Formulas:
    - .1 Generator Room, Control Room, all interior curbs, surfaces, and equipment pads - Formula 20.
  - .4 Formula Designations
    - .1 Formula 20
      - .1 Preparation: SSPC-13, Table 1, Severe Service. Surface Profile: ICRI CSP 6
      - .2 Coating system
        - .1 Semstone 140 AFC by Carboline.
        - .2 Horizontal surfaces:
          - .1 P = Semstone 110 at 5-6 mils DFT
          - .2 SC = Semstone 140 at 30 mils complete with aggregate fill, 20/40 mesh Silica or Aluminum Oxide. Broadcast the 20/40 mesh Silica or Aluminum Oxide evenly and provide a dry beach sand appearance
          - .3 F= Semstone 140 at 15-20 mils DFT
        - .3 Vertical surfaces:
          - .1 P = Semstone 110 at 5-6 mils DFT
          - .2 I (void filler) = Semstone 110 Blended with fine silica and Semstone Thixotrope Part "D". Intermediate coat to thickness required to fill voids flush to remaining surface.
          - .3 T= Semstone 140 at 40 mils DFT, blended with 80/120 silica and Semstone Thixotrope Part "D".
        - .4 Floor and curb intersections and curb inside corners: infilled with Carboguard 510, blended with Portland Cement (TYPE I) and sand as required to provide minimum 25 mm radius.

### **3. EXECUTION**

#### **3.1 General**

- .1 Relative humidity of the concrete surface is to conform to SSPC-SP13 Table 1 - Severe Service, using the ASTM D 4263 test method.
- .2 Concrete surface tensile strength shall be 2.1 MPa minimum. Remediation of the concrete for values lower than 2.1 MPa will be at the Contractor's expense.

**END OF SECTION**