

**Part 1            General**

**1.1            RELATED REQUIREMENTS**

- .1            Section 09 21 99 – Partitions for minor works

**1.2            REFERENCE STANDARDS**

- .1            The Master Painters Institute (MPI)
  - .1            Maintenance Repainting Manual 2004, Master Painters Institute (MPI), including Identifiers, Evaluation, Systems, Preparation and Approved Product List.
- .2            Environmental Protection Agency (EPA)
  - .1            Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings).
- .3            Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1            Material Safety Data Sheets (MSDS).
- .4            South Coast Air Quality Management District (SCAQMD), California State
  - .1            SCAQMD Rule 1113-04, Architectural Coatings.

**1.3            QUALITY ASSURANCE**

- .1            Qualifications:
  - .1            Contractor: to have a minimum of five years proven satisfactory experience. Provide a list of last three comparable jobs including, job name and location, specifying authority, and project manager.
  - .2            Qualified journeypersons as defined by local jurisdiction to be engaged in repainting work.
  - .3            Apprentices: may be employed provided they work under the direct supervision of qualified journeyperson in accordance with applicable trade regulations.
- .2            Conform to latest MPI requirements for interior repainting work including cleaning, preparation and priming.
- .3            Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners and solvents) shall be in accordance with the latest edition of the MPI Approved Product List and shall be from a single manufacturer for each system used.
- .4            Paint materials such as linseed oil, shellac, reducers and turpentine shall be the highest quality product of an approved manufacturer listed in MPI Maintenance Repainting Manual and shall be compatible with other coating materials as required.
- .5            Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.
- .6            Standard of Acceptance: when viewed using final lighting source surfaces shall indicate the following:
  - .1            Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.

- .2 Ceilings: no defects visible from floor at 45 degrees to surface.
- .3 Final coat to exhibit uniformity of colour and sheen across full surface area.

#### **1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide product data and manufacturer's installation/application instructions for each paint and coating product to be used in accordance with the requirements of Section 01 33 00 - Submittal Procedures.
- .2 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Submit full range colour sample chips for review and selection. Indicate where colour availability is restricted.
  - .2 Submit the required Material Safety Data Sheets (WHMIS) for the paint products and coatings used.
- .3 Closeout Submittals:
  - .1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
    - .1 Submit records of products used. List products in relation to finish system and include following:
      - .1 Product name, type and use (i.e. materials and location).
      - .2 Manufacturer's product number.
      - .3 Colour code numbers.
      - .4 MPI Environmentally Friendly classification system rating.
      - .5 Manufacturer's Material Safety Data Sheets (MSDS).

#### **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements, supplemented as follows:
  - .1 Deliver and store materials in original containers, sealed, with labels intact.
  - .2 Labels to indicate:
    - .1 Manufacturer's name and address.
    - .2 Type of paint or coating.
    - .3 Compliance with applicable standard.
    - .4 Colour number in accordance with established colour schedule.
  - .3 Remove damaged, opened and rejected materials from site.
  - .4 Store and handle in accordance with manufacturer's recommendations.
  - .5 Store materials and equipment in secure, dry, well-ventilated area with temperature range between 7 degrees C to 30 degrees C. Store materials and supplies away from heat generating devices and sensitive products above minimum temperature as recommended by manufacturer.
  - .6 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Departmental Representative. After completion of operations, return areas to clean condition to approval of Departmental Representative.
  - .7 Remove paint materials from storage in quantities required for same day use.

- .8 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.

## 1.6 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
  - .1 Do not perform repainting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application and until paint has cured sufficiently.
  - .2 Ventilate enclosed spaces in accordance with Section 7 days after completion of application of paint.
  - .3 Co-ordinate use of existing ventilation system with Department Representative and ensure its operation during and after application of paint as required.
  - .4 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements. Use of gas-fired appliances is not permitted.
  - .5 Do not perform painting work unless minimum lighting level of 323 Lux is provided on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Unless specifically pre-approved by specifying body, Paint Inspection Agency and, applied product manufacturer, do not perform repainting work when:
    - .1 Ambient air and substrate temperatures are below 10 degrees C.
    - .2 Substrate temperature is over 32 degrees C unless paint is specifically formulated for application at high temperatures.
    - .3 Relative humidity within area to be repainted is above 85%.
  - .2 Conduct moisture tests using properly calibrated electronic Moisture Meter, except use simple "cover patch test" on concrete floors to be repainted.
  - .3 Do not perform repainting work when maximum moisture content of substrate exceeds:
    - .1 12% for concrete and masonry (clay and concrete brick/block).
    - .2 15% for wood.
    - .3 12% for plaster and gypsum board.
  - .4 Test painted concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Surface and Environmental Conditions:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted herein.
  - .3 Apply paint when previous coat of paint is dry or adequately cured, unless otherwise pre-approved by specific coating manufacturer.

## **1.7 MAINTENANCE**

- .1 Extra Materials
  - .1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
  - .2 Submit one - one four litre can of each type and colour of finish coating. Identify type and colour in relation to established colour schedule and finish system.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Paint materials listed in latest edition of MPI Approved Product List (APL) are acceptable for use on this project.
- .2 Where required by authorities having jurisdiction, paints and coatings to provide a fire resistant rating.
- .3 Paint materials for repaint systems to be products of single manufacturer.
- .4 Paints, coatings, thinners, solvents, cleaners and other fluids used in repainting, to be as follows:
  - .1 Not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
  - .2 Be manufactured without compounds which contribute to ozone depletion in upper atmosphere.
  - .3 Be manufactured without compounds which contribute to smog in lower atmosphere.
  - .4 Be manufactured where matter generating 'Biochemical Oxygen Demand' (BOD) in undiluted production plant effluent discharged to natural watercourse or a sewage treatment facility lacking secondary treatment does not exceed 15 mg/L.
  - .5 Be manufactured where total suspended solids (TSS) content in undiluted production plant effluent discharged to natural watercourse or sewage treatment facility lacking secondary treatment does not exceed 15 mg/L.
- .5 Paints and coatings must not be formulated or manufactured with formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.

### **2.2 COLOURS**

- .1 List of colors provide by Departmental Representative.
- .2 Colour schedule will be based upon selection of five base colours and three accent colours. No more than eight colours will be selected for entire project and no more than three colours will be selected in each area.
- .3 Selection of colours will be from manufacturers full range of colours.
- .4 Where specific products are available in restricted range of colours, selection will be based on limited range.

- .5 First coat in two coat repaint system to be tinted slightly lighter colour than top coat to show visible difference between coats.

### **2.3 MIXING AND TINTING**

- .1 Perform colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials is allowed with Departmental Representative's written permission.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Where thinner is used, addition not to exceed paint manufacturer's recommendations. Do not use kerosene or such organic solvents to thin water-based paints.
- .4 Thin paint for spraying in accordance with paint manufacturer' instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Departmental Representative.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

### **2.4 GLOSS/SHEEN RATINGS**

- .1 Paint gloss defined as sheen rating of applied paint, in accordance with following MPI gloss / sheen standard values:
- .2 Gloss level ratings of repainted surfaces as noted on Finish Schedule.

### **2.5 INTERIOR PAINTING SYSTEMS**

- .1 RIN 5.3 - Galvanized Metal: (High Contact/High Traffic Areas (Doors, Frames, Railings, Pipes, and Handrails). Low Contact/Low traffic areas (Overhead Decking, Pipes, and Ducts).
  - .1 RIN 5.3B - High Performance Acrylic
- .2 RIN 9.2 - Plaster and Gypsum Board: (gypsum wallboard, drywall, and "sheet rock type material".
  - .1 RIN 9.2A – Latex, velvet.

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

### **3.2 PREPARATION**

- .1 Perform preparation and operations for interior painting in accordance with MPI Maintenance Repainting Manual requirements except where otherwise specified.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

- .3 Clean and prepare interior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
  - .1 Remove dust, dirt, and surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
  - .2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using stiff bristle brush to remove dirt, oil and surface contaminants.
  - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
  - .4 Allow surfaces to drain completely and to dry thoroughly. Allow sufficient drying time and test surfaces using an electronic moisture metre before commencing work.
  - .5 Use water-based cleaners in place of organic solvents where surfaces will be repainted using water based paints.
  - .6 Many water-based paints cannot be removed with water once dried. Minimize use of kerosene or such organic solvents to clean up water-based paints.
- .4 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminants from surfaces, pockets and corners to be repainted by brushing with clean brushes, blowing with clean dry compressed air, or brushing/vacuum cleaning as required.
- .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.
- .6 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from distance up to 1000 mm.

### **3.3 EXISTING CONDITIONS**

- .1 Prior to commencing work, examine site conditions and existing interior substrates to be repainted. Report in writing to Departmental Representative damages, defects, or unsatisfactory or unfavourable conditions or surfaces that will adversely affect this work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Maximum moisture content not to exceed specified limits.
- .3 Do not commence until such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to Painting Subcontractor and Inspection Agency.
- .4 Degree of surface deterioration (DSD) to be assessed using MPI Identifiers and Assessment criteria indicated in MPI Maintenance Repainting Manual. MPI DSD ratings and descriptions are as follows:

### **3.4 PROTECTION**

- .1 Protect existing surfaces and adjacent fixtures and furnishings from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore such surfaces as directed by Departmental Representative.
- .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
- .3 Protect factory finished products and equipment.
- .4 Protect general public and building occupants in and about building.
- .5 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and surface mounted equipment, fittings and fastenings prior to undertaking re-painting operations. Store items and re-install after painting is completed.
- .6 Move and cover furniture and portable equipment as necessary to carry out repainting operations. Replace as painting operations progress.
- .7 As repainting operations progress, place "WET PAINT" signs in occupied areas to approval of Departmental Representative.

### **3.5 APPLICATION**

- .1 Apply paint by method that is best suited for substrate being repainted using air sprayer, brush, roller and/or airless sprayer. Conform to manufacturer's application instructions unless specified otherwise. Methods of application as pre-approved by before commencing work.
- .2 Brush and Roller Application:
  - .1 Apply paint in uniform layer using brush and/or roller of types suitable for application.
  - .2 Work paint into cracks, crevices and corners.
  - .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
  - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple
  - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 Spray Application:
  - .1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
  - .2 Keep paint ingredients properly mixed in containers during paint application by intermittent agitation frequently as necessary.
  - .3 Apply paint in uniform layer, with overlapping at edges of spray pattern.
  - .4 Back roll spray applications and brush out runs and sags immediately.
  - .5 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray.
- .4 Use dipping, sheepskins or daubers when no other method is practical in places of difficult access and when specifically authorized by Departmental Representative.

- .5 Apply paint coats in continuous manner and allow surfaces to dry and properly cure between coats for minimum time period as recommended by manufacturer. Minimum dry film thickness of coats not less than that recommended by manufacturer. Repaint thin spots or bare areas before next coat of paint is applied.
- .6 Sand and dust between coats to remove visible defects.
- .7 Repaint surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .8 Repaint top, bottom, and vertical edges of doors to be repainted.
- .9 Repaint inside of cupboards and cabinets as specified for outside surfaces.
- .10 Repaint closets and alcoves to match existing, unless otherwise scheduled or noted.

### **3.6 MECHANICAL/ELECTRICAL EQUIPMENT**

- .1 Unless otherwise noted, repainting to include exposed to view / previously painted mechanical and electrical equipment and components (panels, conduits, piping, hangers, and ductwork.).
- .2 Touch up scratches and marks and repaint such mechanical and electrical equipment and components with colour, and sheen finish to match existing unless otherwise noted or scheduled.
- .3 Do not paint over name plates or instruction labels.
- .4 Leave unfinished exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish.
- .5 Keep sprinkler heads free of paint.
- .6 Do not paint interior transformers and substation equipment.
- .7 Standard of Acceptance: when viewed using natural prevailing sunlight at peak period of day (mid-day) on surface viewed, surfaces to indicate following:
  - .1 Walls: no defects visible from distance of 1000 mm at 90 degrees to surface.
  - .2 Soffits: no defects visible from grade at 45 degrees to surface
  - .3 Final coat to exhibit uniformity of colour and sheen across full surface area.

### **3.7 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning, supplemented as follows:
  - .1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
  - .2 Keep work area free from unnecessary accumulation of tools, equipment, surplus materials and debris.
  - .3 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.
  - .4 Clean equipment and dispose of wash water used for water borne materials, solvents used for oil based materials as well as other cleaning and protective materials (e.g. rags, drop cloths, and masking papers), paints, thinners, paint

removers/strippers in accordance with safety requirements of authorities having jurisdiction and as noted herein.

- .5 Clean painting equipment in leak-proof containers that will permit particulate matter to settle out and be collected. Sediment remaining from cleaning operations to be recycled or disposed of in manner acceptable to authorities having jurisdiction.
- .6 Recycle paint and coatings in excess of repainting requirements as specified.

### **3.8 RESTORATION**

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on affected exposed surfaces. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

**END OF SECTION**