

PART 1 - GENERAL

1.1 SCOPE OF WORK

- .1 Spackle gypsum board and like surfaces.
- .2 Paint interior surfaces exposed to view or semi-exposed view when standing with an eye height between 900 and 1800 mm above finished floor or when traveling up and down stairs, or fixed-in-place ladders, or when viewed from landings, balconies, or other pedestrian platforms, including interiors of cupboards, closets, and other similar enclosures; unfinished exterior surfaces; and those other surfaces specified as having a paint finish.

1.2 RELATED WORK

- .1 General Requirements: Division 1
- .2 Gypsum Board Assemblies Section 09 21 16

1.3 REFERENCES

- .1 Perform spackling work to CSA A82.31-M1980, except where specified otherwise.
- .2 American Society for Testing and Materials (ASTM)
  - .1 ASTM D 3960- 93, Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
- .3 Perform painting work to CAN/CGSB-85.100-93 Painting, except where specified otherwise.
  - .1 CAN/CGSB-1.36- 97, General Purpose Interior Varnish.
  - .2 CAN/CGSB-1.38- M91, Interior Enamel Undercoater.
  - .3 CGSB 1-GP-48M- 78, Primer, Marine, for Steel.
  - .4 CAN/CGSB-1.57- 96, Alkyd, Interior, Semi gloss, Enamel.
  - .5 CAN/CGSB-1.60- 97, Interior Alkyd Gloss Enamel.
  - .6 CAN/CGSB-1.68- M91, Solvent Type Primer-Sealer for Interior Walls.
  - .7 CAN/CGSB-1.73- 97, Exterior and Interior Enamel for Floors.
  - .8 CAN/CGSB-1.100- 95, Interior Latex Type, Flat Paint.
  - .9 CAN/CGSB-1.119- 95, Primer-Sealer, Wall, Interior Latex Type.
  - .10 CAN/CGSB-1.195- 95, Interior Semi gloss Latex Paint.
  - .11 CGSB 85-GP-1M- 78, Painting (New) Exterior Wooden Surfaces.
  - .12 CGSB 85-GP-10M- 79, Shop Painting Structural Steel.
  - .13 CGSB 85-GP-32M- 79, Painting Concrete Floors.
  - .14 CAN/CGSB-85.100- 93, Painting.
- .4 Canadian Painting Contractors' Association

(CPCA).

.1 Painting Specifications Manual 1993.

.5 National Fire Code of Canada 1995.

.6 Steel Structures Painting Council (SSPC).

.1 Systems and Specifications Manual 1989.

1.4 SUBMITTALS

- .1 Submit product data and manufacturer's installation/application instructions for each paint and coating product to be used in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit full records of all products used. List each product in relation to finish formula and include the following:
  - .1 Finish formula designation.
  - .2 Product type and use.
  - .3 CGSB number.
  - .4 Manufacturer's product number.
  - .5 Colour numbers.
  - .6 Manufacturer's Material Safety Data Sheets (MSDS).
  - .7 Maximum VOC classification.
  - .8 Ecologo certification.
  - .9 MPI Environmentally Friendly Classification System Rating.

1.5 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit 300 x 200 mm sample panels of each paint type specified.
- .3 Submit full range of available colours where colour availability is restricted.
- .4 Use 3 mm plate steel for finishes over metal surfaces. Use 12.5 mm birch plywood for finishes over wood surfaces. Use 50 mm concrete block for finishes over concrete or concrete masonry surfaces. Use 12.5 mm gypsum board for finishes over gypsum board and other smooth surfaces.
- .5 When approved, sample panels shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.

1.6 QUALITY ASSURANCE

- .1 Contractor shall have a minimum of five years proven satisfactory experience. When requested, provide a list of last three comparable jobs including: job name and location, specifying authority, and project manager.
- .2 Conform to latest MPI requirements for interior painting work including preparation and priming.
- .3 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with MPI Painting Specification Manual Approved Product Listing and

- shall be from a single manufacturer of each system used.
- .4 Other paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification 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:
    - .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 when viewed using final lighting source.
    - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- 1.7 QUALITY CONTROL
- .1 Provide mock-ups in accordance with Section 01 45 00 - Quality Control.
  - .2 When requested by Departmental Representative, prepare and paint designated surface, area, room or item (in each colour scheme) to requirement specified herein, with specified paint or coating show selected colours, gloss/sheen, textures and workmanship. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on site work.
- 1.8 DELIVERY STORAGE AND HANDLING
- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
  - .2 Deliver and store materials in original containers, sealed, with labels intact.
  - .3 Indicate on containers or wrappings:
    - .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.
  - .4 Remove damaged, opened and rejected materials from site.
  - .5 Provide and maintain dry, temperature controlled, secure storage.
  - .6 Observe manufacturer's recommendations for storage and handling.
  - .7 Store materials and supplies away from heat generating devices.
  - .8 Store materials and equipment in a well ventilated area with temperature range 7°C to

- 30°C.
- .9 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
  - .10 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.
  - .11 Provide minimum one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.
  - .12 Remove only in quantities required for same day use.
  - .13 Fire Safety Requirements
    - .1 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
    - .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.
  - .14 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials.

1.9 ENVIRONMENTAL  
REQUIREMENTS

- .1 Environment Choice Program
  - .1 Submit CSA Certification Reports that products proposed for use are certified under the Environmental Choice Program. Water based paints to be certified to ECP-07-89. Solvent based paints to be certified to ECP-12-89.
- .2 Ventilation:
  - .1 Ventilate area of work as directed by Departmental Representative by use of approved portable supply and exhaust fans.
  - .2 Ventilate enclosed spaces.
  - .3 Provide continuous ventilation during and after application of paint. Run ventilation system 24 hours per day during installation; provide continuous ventilation for 7 days after completion of application of paint.
- .3 Apply paint finishes only when temperature at location of installation can be satisfactorily maintained within manufacturers recommendations.
- .4 Substrate and ambient temperature must be within limits prescribed in paint standard and by manufacturer to approval of Departmental Representative .
- .5 Maintain minimum substrate and ambient air temperature of 5°C for Alkyd and 7°C for latex paints. Maximum relative humidity 85%. Maintain

- supplemental heating until paint has cured sufficiently.
- .6 Provide temporary heating where permanent facilities are not available to maintain minimum recommended temperatures.
- .7 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.
- .8 Apply paint only when surface to be painted is dry, properly cured and adequately prepared.
- .9 Provide minimum 270 lx on surfaces to be painted.

1.10 SCHEDULING OF WORK

- .1 Submit work schedule for various stages of painting to Departmental Representative for approval. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from Departmental Representative for any changes in work schedule.

1.11 EXTRA MATERIALS

- .1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Submit one - four litre can of each type and colour of finish coating. Identify colour and paint type in relation to established colour schedule and finish formula.
- .3 Deliver to Departmental Representative and store where directed.
- .4 Provide certificate signed by staff that extra materials have been received in order.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Qualified products: only paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Paint materials for each coating formula to be products of a single manufacturer.
- .3 Low odor products. Whenever possible, select products exhibiting low odor characteristics. If two products are otherwise equivalent, select the product with the lowest odor.
- .4 Paints, coatings, adhesives, solvents, cleaners lubricants and other fluids shall:
  - .1 be nonflammable
  - .2 be manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
  - .3 be manufactured without compounds which contribute to smog in the lower atmosphere.
  - .4 do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
- .5 Water-borne surface coatings must be manufactured

and transported in a manner that steps of process, including disposal of waste products arising there from, will meet requirements of applicable governmental acts, by laws and regulations including, for facilities located in Canada, Fisheries Act and Canadian Environmental Protection Act. (CEPA).

- .6 Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their components.
- .7 Water-borne surface coatings must have a flash point of 61.0° C or greater.
- .8 Water borne surface coatings must be made by a process that does not release:
  - .1 Matter in undiluted production plant effluent generating a Biochemical Oxygen Demand (BOD) in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.
  - .2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.

## 2.2 COLOURS

- .1 Departmental Representative will provide Colour Schedule after contract award.
- .2 Selection of colours will be from manufacturers full range of colours.
- .3 Where specific products are available in a restricted range of colours, selection will be based on the limited range.
- .4 Second coat in a three coat 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 on site. On site tinting of painting materials is allowed only with Departmental Representative's written permission.
- .2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturers written instructions.
- .3 Where thinner is used, addition shall not exceed paint manufacturers recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.
- .4 Thin paint for spraying in strict accordance with paint manufacturers instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide a 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 shall be defined as the sheen rating of applied paint, in accordance with the following values:

Gloss Level Category	Units @ 60°	Units @ 85°
G1-matte finish	0 to 5	Max 10
G2-velvet finish	0 to 10	10 to 35
G3-eggshell finish	10 - 25	10 - 35
G4-satin finish	20 - 35	min 35
G5-semi-gloss finish	35 - 70	
G6-gloss finish	70 - 85	
G7-high gloss finish	> 85	

- .2 Gloss level ratings of painted surfaces shall be as specified herein.

2.5 INTERIOR PAINT SYSTEMS

- .1 Concrete Vertical Surfaces: including horizontal soffits.  
 .1 INT 3.1A Latex G5 finish (over sealer)
- .2 Plaster and Gypsum Board: gypsum wallboard, drywall, sheet rock type material etc and textured finishes:  
 .1 INT 9.2A Latex G5 finish (over latex sealer) for walls  
 .2 INT 9.2A Latex G1 finish (over latex sealer) for ceilings.
- .3 Dressed Lumber: including doors, door and window frames casings, mouldings, etc.  
 .1 INT 6.3T Latex G5 finish (over latex primer).
- .4 Concrete Horizontal Surfaces: floors and stairs.  
 .1 INT 3.2B, Alkyd floor enamel, low gloss, finish
- .5 Structural Steel and Metal Fabrications: columns, beams, joists, etc.  
 .1 INT 5.1E Alkyd G5 finish
- .6 Galvanized Metal: doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.  
 .1 INT 5.3A Latex G5 finish.
- .7 Copper:

- .1 INT 5.5A Alkyd G5 finish
- .8 Canvas and Cotton Coverings:
  - .1 INT 10.1B Alkyd G5 finish
- .9 Wood Paneling and casework: partitions, panels, shelving, millwork, etc.
  - .1 INT 6.4 C semi-transparent stain finish.
- .10 Epoxy paint on concrete (cell block walls and floors).
  - .1 Two-component, 92% solids epoxy coating.
  - .2 Acceptable Product: Duroplast 100 or Duroplast 150.

PART 3 - EXECUTION

3.1 GENERAL

- .1 Perform all painting operations for interior painting in accordance with MPI Painting Specification Manual except where specified otherwise.
- .2 Apply all paint materials in accordance with paint manufacturers written application instructions.
- .3 Tapping and Filing
  - .1 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's instructions.
  - .2 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
  - .3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
  - .4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
  - .5 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
  - .6 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
  - .7 All gypsum board surfaces to be taped and filled, including surfaces above ceilings in fire-rated non-fire rated partitions and sound rated partitions with a 48 STC rating or higher.

3.2 PREPARATION

- .1 Remove electrical cover plates, light fixtures, surface hardware on doors, door stops, bath accessories and all other surface mounted fittings and fastenings prior to

- undertaking any painting operations. Store for re-installation after painting is completed.
- .2 As painting operations progress, place "WET PAINT" sign in occupied areas to approval of Departmental Representative .

### 3.3 PROTECTION

- .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage. If damaged, clean and restore such surfaces as directed by Departmental Representative.
- .2 Cover or mask floors, windows and other ornamental hardware adjacent to areas being painted to prevent damage and to protect from paint drops and splatters. Use non-staining coverings.
- .3 Protect items that are permanently attached such as Fire Labels on doors and frames.
- .4 Protect factory finished products and equipment.
- .5 Protect passing pedestrians, building occupants and the general public in and about the building.

### 3.4 EXISTING CONDITIONS

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative all damage, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Investigate moisture content of surfaces to be painted and report findings to Departmental Representative. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 Maximum moisture content as follows:
  - .1 Plaster and wallboard: 12%.
  - .2 Masonry/Concrete: 12%.
  - .3 Concrete Block/Brick: 12%.
  - .4 Wood: 15%.

### 3.5 CLEANING AND PREPARATION

- .1 Clean all surfaces to be painted as follows:
  - .1 Remove all dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
  - .2 Wash surfaces with biodegradable detergent and bleach and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
  - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
  - .4 Allow surfaces to drain completely and allow to dry thoroughly.
- .2 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is

- applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .3 Sand existing surfaces with intact, smooth, high gloss coatings to provide adequate adhesion for new finishes.
  - .4 Where possible, prime all surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
    - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
    - .2 Apply wood filler to nail holes and cracks.
    - .3 Tint filler to match stains for stained woodwork.
  - .5 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
  - .6 Clean new metal surfaces to be painted by: removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements.
  - .7 Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes blowing with clean dry compressed air, or vacuum cleaning.
  - .8 Touch up shop primer with primer as specified in applicable section. Touch-up to include cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas.
  - .9 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.

### 3.6 APPLICATION

- .1 Method of application to be as approved by Departmental Representative . Apply paint by brush roller air sprayer airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and roller application.
  - .1 Apply paint in a uniform layer using brush and/or roller of types suitable for application.
  - .2 Work paint into cracks, crevices and corners.
  - .3 Brush and/or roll out runs and sags and over-sap marks. Rolled surfaces shall be free of roller tracking and heavy stipple.
  - .4 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.
  - .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 either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
    - .3 Apply paint in a uniform layer, with overlapping at edges of spray pattern.
    - .4 Brush out immediately all runs and sags.
    - .5 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray.
  - .4 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access and only when specifically authorized by Departmental Representative.
  - .5 Apply each coat of paint as a continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
  - .6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
  - .7 Sand and dust between each coat to remove visible defects.
  - .8 Finish tops of cupboards, cabinets and projecting ledges, both above and below sight lines as specified for surrounding surfaces.
  - .9 Finish closets and alcoves as specified for adjoining rooms.
  - .10 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.
- 3.7 MECHANICAL /  
ELECTRICAL EQUIPMENT
- .1 In finished areas: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment. Colour and texture to match adjacent surfaces, except as noted otherwise.
  - .2 In boiler room, mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.
  - .3 In other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
  - .4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
  - .5 Do not paint over nameplates.

- .6 Keep sprinkler heads free of paint.
- .7 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
- .8 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .9 Paint all fire protection piping Red.
- .10 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.8 FIELD QUALITY Control

- .1 Field inspection of interior painting operations to be carried out by Departmental Representative.
- .2 Advise Departmental Representative when each applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .3 Co-operate with Departmental Representative and provide access to all areas of the work.

3.9 RESTORATION

- .1 Clean and re-install all hardware items that were removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. 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