

PART 4 GENERAL

- 4.1 This section includes all labour, materials, tools and other equipment, services and supervision required to complete all exterior and interior painting and decorating work as indicated on Finish Schedules and to the full extent of the drawings and specifications.
- 4.2 Related Work
 - .1 Division 23 – Mechanical
 - .2 Division 26 – Electrical
- 4.3 References
 - .1 Architectural Painting Specifications Manual, Master Painters Institute (MPI)
- 4.4 Samples
 - .1 Submit samples in duplicate of each colour selected in 300 mm x 300 mm sizes.
- 4.5 Quality Assurance
 - .1 Do not apply paint finish in areas where dust is being generated.
 - .2 The Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of Work that he will maintain a qualified crew of painters throughout the duration of the Work. When requested, the Contractor shall provide a list of the last three comparable jobs including name and location, specifying authority/project manager, start/completion dates and value of the painting work.
 - .3 Only qualified persons, as defined by local jurisdiction shall be engaged in painting and decorating work.
 - .4 All materials, preparation and workmanship shall conform to requirements of the LATEST EDITION of the Architectural Painting Specification Manual by Master Painters Institute (MPI)- hereafter referred to as the MPI Painting Manual- as issued by the local MPI Accredited Quality Assurance Association having jurisdiction. All paint manufacturers and products used shall be as listed under the Approved Product List section of the MPI Painting Manual.
- 4.6 Maintenance Materials
 - .1 At project completion, provide 5 gallons of each type and colour of paint from the same production run (batch mix) in unopened cans, properly labelled and identified for City's later use in maintenance.

4.7 Guarantee

- .1 Furnish either the local MPI Accredited Quality Assurance Association's two (2) year guarantee, or alternatively, a 100% two (2) year Maintenance Bond- both in accordance with MPI Painting Manual requirements. The Maintenance Bond shall warrant that all painting work has been performed in accordance with MPI Painting Manual requirements.

PART 5 PRODUCTS

5.1 Materials

- .1 Paint materials: only materials listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project. All such material shall be a single manufacturer for each system used.
- .2 Acceptable products
 - .1 Benjamin Moore- Cloverdale, ICI Delux Lifemaster.- Low VOC, low odour. Choice of full range of colours.
- .3 Other material such as linseed oil, shellac, thinners, solvents, etc. shall be the highest quality product of an MPI listed manufacturer and shall be compatible with paint materials being used as required.
- .4 All materials used shall be lead and mercury free and shall have low VOC content where possible.
- .5 All paint materials used shall have good flowing and brushing properties and shall dry or cure free of blemishes, sags, air entrapment etc.
- .6 Where required, paints and coatings shall meet flame spread and smoke development ratings designated by local Code requirements and/or authorities having jurisdiction.
- .7 Unless otherwise specified herein, all painting work shall be in accordance with MPI Premium Grade finish requirements.
- .8 Colours shall be as selected by the Contract Administrator from a manufacturer's full range of colour. Refer to finish schedules and drawings for identification and location of colours.

PART 6 EXECUTION

6.1 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 deg	Units @ 85 deg
G1- matte finish	0 to 5	Max. 10
G2- velvet finish	0 to 10	10 to 35
G3 – eggshell finish	10 to 25	10 to 35
G4 – satin finish	20 to 35	Min 35
G5 – semi-gloss finish	35 to 70	
G6 – gloss finish	70 to 85	
G7 – high gloss finish	> 85	

6.2 Condition of Surfaces

- .1 Prior to commencement of the Work in this section, thoroughly examine (and test as required) all conditions and surfaces scheduled to be painted and report in writing to the Contractor and the Contract Administrator any conditions or surfaces that will adversely affect work of the section.
- .2 No painting work shall commence until all such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Contractor and the Contract Administrator.
- .3 Commencement of the Work shall not be held to imply acceptance of surfaces except as qualified herein. Such surfaces as concrete, masonry, structural steel and miscellaneous metal, wood, gypsum board, and plaster, shall not be the responsibility of the Painting Sub-Contractor.
- .4 The Painting Sub-Contractor shall not be responsible for the condition of the substrate or for correcting defects and deficiencies in the substrate, which may adversely affect the painting work except for minimal work, normally performed by the Painting Sub-trade and as indicated herein. It shall always, however, be the responsibility of the Painting Sub-trade to see that surfaces are properly prepared before any paint or coating is applied.

6.3 Preparation of Surfaces

- .1 Prepare all surfaces in accordance with MPI requirements. Refer to the MPI Painting Manual in regard to specific requirements.
- .2 Sand, clean, dry, etch, neutralize and/or test all surfaces under adequate illumination, ventilation and temperature requirements.
- .3 Remove and securely store all miscellaneous hardware and surface fittings/fastenings {e.g. electrical plates, mechanical louvers, door and window hardware (hinges, knobs, locks, trim, frame stops) removable rating/hazard/instruction labels, washroom accessories, light fixture trim, etc.}, from wall and ceiling surfaces, doors and frames, prior to painting. Carefully clean and replace all such items upon completion of painting work in each area, do not use solvent or reactive cleaning agents on items that will mar or remove finishes (e.g. lacquer finishes). Doors shall be removed before painting to paint bottom and top edges, and then re-hung.
- .4 Protect all adjacent interior surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, etc., from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
- .5 Substrate defects shall be made good and sanded by others ready for painting, particularly after the first coat of paint. Start of finish painting of defective surfaces (e.g. Gypsum board) shall indicate acceptance of the substrate and any costs of making good defects shall be borne by the painter, including repainting of entire surface (no touch-up painting).

6.4 Application

- .1 Do not paint unless substrates are acceptable and/or until all environmental conditions (heating, ventilation, lighting and completion of other sub trade work) are acceptable for applications of products.
- .2 Apply paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.

- .3 Apply paint and decorating material in a workmanlike manner using skilled and trade qualified applicators as noted under Quality Assurance.
- .4 Apply paint and coatings within an appropriate time frame after cleaning when environmental conditions encourage flashing-rusting, rusting, contamination or the manufacturer's paint specifications require earlier applications.
- .5 Painting coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer's recommendations.
- .6 Tint each coat of paint progressively lighter to enable confirmation of number of coats.
- .7 Unless otherwise approved by the Contract Administrator, apply a minimum of four coats of paint where deep or bright colours are used to achieve satisfactory results.
- .8 Sand and dust between each coat to provide an anchor for next coat and to remove defects visible from a distance up to 1000 mm (39").
- .9 Do not apply finishes on surfaces that are not sufficiently dry. Unless manufacturer's directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.
- .10 Prime coat of stain or varnish finishes may be reduced in accordance with manufacturer's directions.
- .11 Paint finish shall continue through behind all wall-mounted items (e.g. chalk and tack boards).

6.5 Mechanical/Electrical Equipment and Related Sections

- .1 Unless otherwise specified or noted, paint all "unfinished" conduits, piping, hangers, ductwork, and other mechanical and electrical equipment with colour and texture to match adjacent surfaces, in the following areas:
 - .1 Where exposed-to-view in all exterior (includes roof-top units) and interior areas.
 - .2 In all interior high humidity interior areas.
 - .3 In all boiler room, mechanical and electrical rooms.
- .2 In unfinished areas, leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .3 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .4 Do not paint over nameplates.
- .5 Paint the inside of all ductwork where visible behind louvers, grilles and diffusers for a minimum of 460 mm (18") or beyond sight line, whichever is greater, with primer and one coat of matt black (non-reflecting) paint.
- .6 Paint the inside of light valances gloss white.
- .7 Paint disconnected switches for fire alarm system and exit light systems in red enamel.
- .8 Paint red or band on all fire protection piping and sprinkler lines in accordance with mechanical specification requirements. Keep sprinkler heads free of paint.
- .9 Paint yellow or band on all natural gas piping in accordance with mechanical specification requirements.

- .10 Back prime and paint face and edges of plywood service panels for telephone and electrical equipment before installation to match adjacent wall surface. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.
- .11 Paint exterior steel electrical light standards. Do not paint outdoor transformers and substation equipment.
- .12 Paint parking stall and parking symbol on concrete paving as indicated on drawing.
- 6.6 Field Quality Control and Standard of Acceptance
 - .1 All surfaces, preparation and paint applications shall be inspected.
 - .2 Painted exterior and interior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent to the Painting Inspection Agency inspector:
 - .1 Brush/roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
 - .2 Evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.
 - .3 Damage due to touching before paint is sufficiently dry or any other contributory cause.
 - .4 Damage due to application on moist surfaces or caused by inadequate protection from the weather.
 - .5 Damage and/or contamination of paint due to blown contaminants (dust, spray, paint, etc.)
 - .3 Painted surfaces shall be considered unacceptable if any of the following are evident under natural lighting source for exterior surfaces and final lighting source (including daylight) for interior surfaces:
 - .1 Visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39").
 - .2 Visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39").
 - .3 Visible defects are evident on ceiling, soffit, and other overhead surfaces when viewed at normal viewing angles.
 - .4 When the final coat on any surface exhibits a lack of uniformity of colour, sheen, texture, and hiding across full surface area.
 - .4 Painted surfaces rejected by the Contract Administrator shall be made good at the expense of the Contractor. Small affected areas may be touched up; large affected areas or areas without sufficient dry film thickness of paint shall be repainted. Runs, sags of damaged paint shall be removed by scraper or by sanding prior to application of paint.
- 6.7 Protection
 - .1 Protect all exterior surfaces and areas, including landscaping, walks, drives, all adjacent building surfaces (including glass, aluminum surfaces, etc.) and equipment and any labels and signage from painting operations and damage by drop cloths, shields,

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- masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
 - .2 Protect all interior surfaces and areas, including glass, aluminum surfaces, etc., and equipment and any labels and signage from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
 - .3 Erect barriers or screens and post signs to warn of or limit or direct traffic away or around Work area as required.
- 6.8 Clean-Up
- .1 Remove all 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/solvents as well as all other cleaning and protective materials (e.g. rags, drop cloths, masking papers, etc.), paints, thinners, paint removers/strippers in accordance with the safety requirements of authorities having jurisdiction.
- 6.9 Interior Finishes
- .1 For poured concrete walls: Concrete blocks, hollow core ceiling, INT 4.2 Alkyd G5.
 - .2 For plaster and gypsum board walls and ceilings: INT 9.2B Architectural Latex: Walls G3, Ceilings G1.
 - .3 For primed ferrous metal surfaces: INT 5.1E Alkyd G5.
 - .4 For galvanized and zinc-coated metal: INT 5.3C Alkyd G5.
 - .5 For insulation covering: INT 5.5A Alkyd G5.
 - .6 For copper piping and fittings: INT 5.5A Alkyd G5.
- 6.10 Exterior Finishes
- .1 For wood to receive paint finish: Ext 6.3B Alkyd G5.
 - .2 For primed ferrous metal surfaces: Ext 5.1D Alkyd G5
 - .3 For galvanized and zinc-coated metal: Ext 5.3B Alkyd G5.