

PART 1 -
GENERAL

- 1.1
REFERENCES
- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .2 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual - February 2004.
 - .2 Standard GPS-1-05, MPI Green Performance Standard for Painting and Coatings.
 - .3 National Fire Code of Canada.
 - .4 Society for Protective Coatings (SSPC)
 - .1 Systems and Specifications, SSPC Painting Manual Volume 2, 2008.
- 1.2
QUALITY ASSURANCE
- .1 Qualifications:
 - .1 Contractor: to have a minimum of five years proven satisfactory experience. When requested, provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.
 - .2 Materials: in accordance with MPI Painting Specification Manual "Approved Product" listing and from a single manufacturer for each system used.
 - .3 Other paint materials such as linseed oil, shellac, and turpentine to be highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and to be compatible with other coating materials as required.
 - .4 Retain purchase orders, invoices and documents to prove conformance with noted MPI requirements when requested by Department Representative.
 - .5 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.
- 1.3
ACTION AND INFORMATION AL SUBMITTALS
- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01357 - Hazardous Materials.
- 1.4
QUALITY
- .1 When requested by Consultant, prepare and paint designated surface, area, room or item to requirements specified herein, with specified paint or coating showing

CONTROL

selected colours, number of coats, gloss/sheen, textures and workmanship to MPI Painting Specification Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.

1.5
DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01610 - Basic 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 Provide and maintain dry, temperature controlled, secure storage.
 - .5 Observe manufacturer's recommendations for storage and handling.
 - .6 Store materials and supplies away from heat generating devices.
 - .7 Store materials and equipment in well-ventilated area with temperature range 7 degrees C to 30 degrees C.
 - .8 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
 - .9 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Consultant. After completion of operations, return areas to clean condition to approval of Consultant.
 - .10 Remove paint materials from storage only in quantities required for same day use.
 - .11 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
 - .12 Fire Safety Requirements:
 - .1 Provide one dry chemical fire extinguisher adjacent to storage area.
 - .2 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.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling, remove from site.
 - .2 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal.
 - .3 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

1.6
AMBIENT
CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Ventilate enclosed spaces.
 - .2 Do not perform painting 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 until paint has cured sufficiently.
 - .3 Where required, provide continuous ventilation for 7 days after completion of application of paint.
 - .4 Co-ordinate use of existing ventilation system with General Contractor and ensure its operation during and after application of paint as required.
 - .5 Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate lighting facilities to be provided by General Contractor.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Unless specifically pre-approved by specifying body, Paint Inspection Agency and, applied product manufacturer, perform no painting 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 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's prescribed limits.
 - .4 Relative humidity is above 85 % or when dew point is less than 3 degrees C variance between air/surface temperatures.
 - .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
 - .2 Perform no painting work when maximum moisture content of substrate exceeds:
 - .1 12% for plaster, gypsum board, concrete and masonry (clay and concrete brick/block).
 - .2 15% for wood.
 - .3 Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple "cover patch test".
 - .4 Test 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 wind or 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.
 - .4 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations. Do not apply paint when:
 - .1 Temperature is expected to drop below [10] degrees C before paint has thoroughly cured.

- .2 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's limits.
- .3 Surface to be painted is wet, damp or frosted.
- .5 Provide and maintain cover when paint must be applied in damp or cold weather. Heat substrates and surrounding air to comply with temperature and humidity conditions specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.
- .6 Schedule painting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.
- .7 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.
- .8 Paint occupied facilities in accordance with approved schedule only.
Schedule operations to approval of Owner such that painted surfaces will have dried and cured sufficiently before occupants are affected.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Only paint materials listed in latest edition of MPI Approved Products List (APL), Green Promise, are acceptable for use on this project. All products shall be fast drying, No or Low VOC paints, washable and scrub able.
- .2 Paint materials for paint systems: Preferred Series: Benjamin Moore, Aura or Natura or approved equal.
- .3 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids, to be as follows:
 - .1 Water-based, water soluble water clean-up.
 - .2 Non-flammable biodegradable.
 - .3 Manufactured without compounds which contribute to ozone depletion in upper atmosphere.
 - .4 Manufactured without compounds which contribute to smog in the lower atmosphere.
 - .5 Shall not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
- .4 Water-borne surface coatings must be manufactured and transported in a manner that steps of processes, including disposal of waste products arising therefrom, 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).
- .5 Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .6 Water-borne surface coatings and recycled water-borne surface coatings must have flash point of 61.0 degrees C or greater.
- .7 Both water-borne surface coatings and recycled 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.
- .8 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes must meet a minimum "Environmentally Friendly" E2 rating.
- .9 Low odour products: wherever possible, select products exhibiting low odour characteristics. If two products are otherwise equivalent, select the product with the lowest odour.

2.2 COLOURS

- .1 Consultant will provide Colour Schedule after Contract award.
- .2 Colour schedule will be based upon selection of five base colours and three accent colours.
- .3 Selection of colours will be from manufacturer's full range of colours.
- .4 Generally and unless otherwise specified herein or noted on Finish Schedules the quantity of colors and finishes shall be based on the following criteria:
 - .1 Color selection will be based on five (5) base colors and three (3) accent colors with a maximum of one (1) deep or bright color. No more than eight (8) colors will be selected for the entire project. Note that this does not include pre-finished items unless specifically scheduled.
 - .2 Corridors shall be repainted with separate color scheme, prepare doors and trim
 - .3 Plaster Trims, chair rails shall receive color to match window and door trim.
 - .4 Window trim, including frames, sill and sashes shall be painted to match window and door trim.
 - .5 Access doors, registered, radiators and covers, exposed piping and electrical panels shall be repainted to match adjacent surfaces, unless noted.

2.3 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. Paint shall have a VOC of less than 48 g per litre after tinting and be use low VOC tint base whenever possible. On-site tinting of painting materials is allowed only with Consultant's written permission.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Add thinner to paint manufacturer's recommendations. Do not use kerosene or organic solvents to thin water-based paints.
- .4 Thin paint for spraying according in accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant.
- .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 MPI gloss/sheen standard levels:

Gloss Level Category/	Units @ 60 Degrees/	Units @ 85 Degrees/
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	

2.5

PAINTING
SYSTEMS

.1 New Surfaces: Paint interior surfaces in accordance with the following MPI Architectural Painting Specifications manual requirements. Wall finishes to be eggshell, ceilings to be flat finish and all trims to be satin finish. Walls and trim to receive the same colour AF-25:

.1 Galvanized metal: doors, frames, railings, misc. steel, pipes, overhead decking, and ducts, etc.

.1 INT 5.3H - Waterborne dry wall finish for overhead decking, ducts, structural steel and low contact/low traffic areas only.

.2 INT 5.3M - High performance architectural latex G2 Velvet finish.

.2 Plaster and gypsum board: gypsum wallboard, drywall :

.1 INT 9.2M - Institutional low odour/low VOC Latex G3 Egg shell finish.

.1 For kitchen and washrooms use kitchen & bath paint.

.3 Exterior Wood Soffit, Fascia, door and window trims: semi-gloss G6 high build latex - K632

.4 Interior Wood in wet and unheated locations – all exposed joists, u/s roof, MDO plywood, board and batten, exposed wood studs, high build, low luster G4 latex- K634

.2 Previously Painted Surfaces: Paint previously painted interior surfaces in accordance with the following MPI Maintenance Repainting Specification Manual requirements. The following paint formulas require a two-coat finish as indicated in the MPI Repainting Maintenance Manual:

.1 Casework: picture rail, panels, shelving, millwork:

.1 INT 9.2M - Institutional low odour/low VOC G5 Semi-gloss finish.

.2 Fresh start by Benjamin Moore (or approved equal) as primer.

Number of coats as per manufacturer's recommendation.

.2 Plaster and gypsum board, gypsum wallboard, existing plaster, plaster decorative moulding, drywall:

- .1 INT 9.2a - Institutional low odour/low VOC Latex G3 Egg shell finish for walls
- .2 INT 9.2a - Latex G1 Matt finish (over latex sealer) for ceilings.
- .3 INT 9.2a - Institutional low odour/low VOC Latex G3 Egg shell finish for plaster molding and bulkheads.
- .4 For kitchen and baths use kitchen & bath paint.
- .3 Dressed lumber: including doors, door and window frames, casings, mouldings:
 - .1 RIN 6.3A - opaque latex enamel G5 finish.
- .4 Existing Stained Wood : solid oak door to be refitted to suit new hardware, interior moulding to be trimmed to suit, damaged area to receive matching wood plugs, door to be prepared for new stain finish. (See 2.5.3 below)
- .5 Exposed Concrete masonry units, where noted RIN 4.2:
 - .1 RIN 4.2A - Latex G5 finish. .
 - .2 Concrete block - k634 latex exterior high build G4 low lustre finish
- .6 Structural steel and metal fabrications where noted RIN 5.1:
 - .1 RIN 5.1 K-2 component epoxy finish.
- .7 Galvanized metal: doors, frames, railings, pipes, handrails and high contact/high traffic areas and low contact/low traffic areas such as overhead decking, pipes, and ducts RIN 5.3: RIN 5.3C – alkyd G5 finish.
- .8 Exposed Dimension lumber: columns, beams, exposed joists, underside of decking, RIN 6.2:
 - .1 RIN 6.2A - Latex G4 finish (over latex primer).
- .9 Interior Unfinished wood studs to receive new latex G5 semi-gloss, K528 finish.
- .10 Vertical Wood Siding: previously painted brown wood shield surfaces to be prepared and receive exterior solid stain finish, K640 exterior solid stain, arbourcoat or equal.

2.6

PAINTING
REQUIRMENT
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- .1 All paint and stain products to be provided in park canada color pallet. Contractor to color match existing colors and review color selections on shop drawings. assume one of four following colors :
 - 1. parks canada green : color dragonfly af-510
 - 2. park gray - eternity af-695
 - 3. white - af-5 frostline
 - 4. brown - af-720 sparrow
- .2 surface preparation and application as per manufacturer's technical data sheets. Primer, # of coats and clean up as per data sheets. Two year replacement warranty shall be provide to cover peeling, delamination, blistering, cracking or any other paint failure.

PART 3 -
EXECUTION

- 3.1 MANUFACTURER'S INSTRUCTION S
- .1 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 exterior painting in accordance with MPI Maintenance Repainting Manual except where specified otherwise.
 - .2 Caulk all joints between different materials before painting.
 - .3 Apply paint materials in accordance with paint manufacturer's written application instructions, to sound surface areas (DSD-0), Slight Deteriorations (DSD-1).
 - .4 Clean and prepare exterior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements, Severely deteriorated (DSD-3) with cracking, checking, scratches small holes and gouges. It is recognized that the existing building areas to be painted contain chips, gouges and other surface defects. No repainting work shall commence until such adverse conditions and defects have been corrected and surfaces and conditions are acceptable.
 - .4 Do not apply paint until prepared surfaces have been accepted by DEPARTMENT Representative and Consultant.
 - .5 Damaged Substrates
 - .1 Surfaces determined to be damaged and in need of repair or replacement (DSD-4), shall be repaired prior to beginning work.
 - .2 Damage detected during prep : where assessed degree of surface degradation of DSD-1 to DSD-3 before preparation of surfaces for repainting is revealed to be DSD-4 after preparation, repair or replacement of such unforeseen defects discovered are to be corrected, as mutually agreed, before repainting is started.
 - .6 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.

- 3.3 SURFACE CONDITIONS
- .1 Prior to commencement of repainting work, thoroughly examine all interior conditions and surfaces scheduled to be repainted, Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to consultant damages, defects, unsatisfactory or unfavorable conditions before proceeding with work.
 - .2 It is recognized that some of the existing building areas to be painted contain chips, gouges and other surface defects. No repainting work shall commence until such adverse conditions and defects have been corrected and surfaces

and conditions are acceptable to the DEPARTMENT Project Coordinator.

- .3 Contractor may wish to replace existing trim with new hardwood trim in lieu of repair at his discretion.
- .4 New work is to exactly match existing.
- .5 Conduct moisture testing of surfaces to be painted using a properly calibrated electronic moisture meter, except test concrete floors for moisture using a simple "cover patch test" and report findings to DEPARTMENT Representative. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .6 Maximum moisture content as follows:
 - .1 Stucco: 12%.
 - .2 Concrete: 12%.
 - .3 Clay and Concrete Block/Brick: 12%.
 - .4 Wood: 15%.

3.4 PROTECTION

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

3.5 APPLICATION

- .1 Method of application to be as approved by DEPARTMENT Representative and Consultant. Apply paint by brush, roller or airless sprayer. Conform to manufacturer's application instructions unless specified otherwise. All paint materials for each coating to be products of single manufacturer.
- .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 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 shall be free of roller tracking and heavy stipple unless approved by Consultant.
 - .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 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 when no other method is practical in places of difficult access and when specifically authorized by DEPARTMENT Representative and Consultant.
- .5 Apply coats of paint as 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 coats to remove visible defects.
- .8 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

3.6
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 splashing's 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 Consultant. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Consultant.

END OF SECTION