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**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 33 00 - Submittal Procedures.
- .2        Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

**1.2                REFERENCES**

- .1        Aluminum Association
  - .1        Designation for Aluminum Finishes-1997.
- .2        American Society for Testing and Materials International, (ASTM)
  - .1        ASTM C1396/C1396M-14a, Standard Specification for Gypsum Board.
  - .2        ASTM C475-15, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .3        ASTM C514, Specification for Nails for the Application of Gypsum Board.
  - .4        ASTM C557-03(2009)e1, Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
  - .5        ASTM C840-16, Specification for Application and Finishing of Gypsum Board.
  - .6        ASTM C954-15, Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
  - .7        ASTM C1002-16, Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .8        ASTM C1047-14a, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .9        ASTM C1280-13a, Specification for Application of Gypsum Sheathing Board.
  - .10      ASTM C1177-13, Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
  - .11      ASTM C1178/C1178M-13, Specification for Glass Mat Water-Resistant Gypsum Backing Board.
- .3        Association of the Wall and Ceilings Industries International (AWEI)
- .4        Canadian General Standards Board (CGSB)
  - .1        CAN/CGSB-51.34, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .5        Underwriters' Laboratories of Canada (ULC)
  - .1        CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.

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**1.3 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver materials in original packages, containers or bundles bearing manufacturers brand name and identification.
- .2 Store materials inside, level, under cover. Keep dry. Protect from weather, other elements and damage from construction operations and other causes.
- .3 Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.

**1.4 SITE ENVIRONMENTAL REQUIREMENTS**

- .1 Maintain temperature minimum 10 degrees C, maximum 21 degrees C for 48 hours prior to and during application of gypsum boards and joint treatment, and for at least 48 hours after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.
- .3 Ventilation: Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

**1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.
- .4 Divert unused gypsum from landfill to gypsum recycling facility for disposal approved by Departmental Representative.
- .5 Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.
- .6 Divert unused wood materials from landfill to recycling facility approved by Departmental Representative.
- .7 Divert unused paint and caulking material from landfill to official hazardous material collections site approved by Departmental Representative.
- .8 Do not dispose of unused paint and caulking materials into sewer systems, into lakes, streams, onto ground or in other locations where it will pose health or environmental hazard.

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**Part 2 Products**

**2.1 MATERIALS**

- .1 Standard board: to ASTM C36/C36M regular, 12 mm thick and 15 mm thick, 1200 mm wide x maximum practical length, ends square cut, edges rounded.
- .2 Nails: to ASTM C514.
- .3 Steel drill screws: to ASTM C1002.
- .4 Stud adhesive: to ASTM C557-03(2009)e1.
- .5 Laminating compound: as recommended by manufacturer, asbestos-free.
- .6 Corner beads to ASTM C1047, zinc-coated by hot-dip process 0.5 mm base thickness, perforated flanges, one piece length per location.
- .7 Sealants: in accordance with Section 07 92 10 - Joint Sealing.
- .8 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .9 Joint compound: to ASTM C475, asbestos-free.
- .10 Cement board, thickness to suit location in the Forklift Battery Storage Room and the Buoy Tool Storage Room at the base of the wall as detailed on the drawings.

**2.2 ERECTION**

- .1 Do application and finishing of gypsum board and cement board in accordance with ASTM C840 except where specified otherwise.
- .2 Do application of gypsum sheathing in accordance with ASTM C1280.
- .3 Install work level to tolerance of 1:1200.

**2.3 APPLICATION**

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.
- .2 Repair damaged gyproc and vapour barrier above the window on the west elevation of the Yard Crew Room.
- .3 Replace all window trim and the entire wooden sill.
- .4 Apply single layer gypsum board to wood furring or framing using screw fasteners stud adhesive for first layer, Maximum spacing of screws 300 mm on centre.
  - .1 Single-Layer Application:
    - .1 Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C840.

- .2 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
- .5 Apply single layer gypsum board to surfaces, where indicated, using laminating adhesive.
  - .1 Comply with gypsum board manufacturer's recommendations.
  - .2 Brace or fasten gypsum board until fastening adhesive has set.
  - .3 Mechanically fasten gypsum board at top and bottom of each sheet.
- .6 Apply board using stud adhesive on furring or framing laminating adhesive on base layer of gypsum board.
- .7 Install gypsum board on walls vertically to avoid end-butt joints. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs, except where local codes or fire-rated assemblies require vertical application.
- .8 Install gypsum board with face side out.
- .9 Do not install damaged or damp boards.
- .10 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

## 2.4 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre using contact adhesive for full length.
- .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .3 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
- .4 Construct control joints of preformed units two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .5 Provide continuous polyethylene dust barrier behind and across control joints.
- .6 Locate control joints where indicated at changes in substrate construction at approximate 10 m spacing on long corridor runs at approximate 15 m spacing on ceilings.
- .7 Install control joints straight and true.
- .8 Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous dust barrier.
- .9 Splice corners and intersections together and secure to each member with 3 screws.
- .10 Install access doors to electrical and mechanical fixtures specified in respective sections.

- .1 Rigidly secure frames to furring or framing systems.
- .11 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .12 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.
- .13 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.
- .14 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .15 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
- .16 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.
- .17 Mix joint compound slightly thinner than for joint taping.
- .18 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.
- .19 Allow skim coat to dry completely.
- .20 Remove ridges by light sanding or wiping with damp cloth.
- .21 Provide protection that ensures gypsum drywall work will remain without damage or deterioration at time of substantial completion.
- .22 Repair any gyproc damaged when installed new personnel doors and sidelites.

**END OF SECTION**

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**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 33 00 - Submittal Procedures.
- .2        Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .3        Section 01 45 00 – Testing Quality Control.
- .4        Section 01 61 00 - Common Product Requirements.
- .5        Section 01 78 00 - Closeout Submittals.
- .6        Section 09 91 23 - Painting of Interior Surfaces.

**1.2                REFERENCES**

- .1        Architectural Painting Specifications Manual, Master Painters Institute (MPI).
- .2        Systems and Specifications Manual, SSPC Painting Manual, Volume Two, Society for Protective Coatings (SSPC).
- .3        Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
- .4        National Fire Code of Canada.

**1.3                QUALITY ASSURANCE**

- .1        Conform to latest MPI requirements for exterior painting work including preparation and priming.
- .2        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 for each system used.
- .3        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.
- .4        Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.
- .5        Standard of Acceptance:
  - .1        Walls: No defects visible from a distance of 1000 mm at 90<sup>0</sup> to surface.

- .2 Soffits: No defects visible from floor at 45<sup>0</sup> to surface when viewed using final lighting source.
- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

#### **1.4 ENVIRONMENTAL PERFORMANCE REQUIREMENTS**

- .1 Provide paint products meeting MPI "Environmentally Friendly" ratings based on VOC (EPA Method 24) content levels.

#### **1.5 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 changes in work schedule.
- .3 Schedule painting operations to prevent disruption of occupants in and about the building.

#### **1.6 SUBMITTALS**

- .1 Submit product data and manufacturer's installation/application instructions for paints and coating products to be used in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Upon completion, submit records of products used. List products in relation to finish system and include the following:
  - .1 Product name, type and use.
  - .2 Manufacturer's product number.
  - .3 Colour numbers.
  - .4 MPI Environmentally Friendly classification system rating.
  - .5 Manufacturer's Material Safety Data Sheets (MSDS).

#### **1.7 SAMPLES**

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.
- .3 Submit full range of available colours where colour availability is restricted.

#### **1.8 QUALITY CONTROL**

- .1 Provide mock-up in accordance with Section 01 45 00 – Testing Quality Control.
- .2 When requested by the Departmental Representative, prepare and paint designated surface, area, room or item (in each colour scheme) to requirements specified herein, with specified paint or coating showing selected colours, 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.

### **1.9 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 primer and finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
- .3 Deliver to Contractor and store where directed.

### **1.10 DELIVERY, HANDLING AND STORAGE**

- .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 Labels shall clearly 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.
- .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<sup>0</sup>C to 30<sup>0</sup>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 Consultant. After completion of operations, return areas to clean condition to approval of Consultant.
- .11 Remove paint materials from storage only in quantities required for same day use.
- .12 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
- .13 Fire Safety Requirements:

- .1 Provide one 9 kg Type ABC 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.

## 1.11 SITE REQUIREMENTS

- .1 Heating, Ventilation and Lighting:
  - .1 Ventilate enclosed spaces in accordance with Section 01 50 00 Temporary Facilities.
  - .2 Perform no painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10<sup>0</sup>C for 24 hours before, during and after paint application until paint has cured sufficiently.
  - .3 Where required, provide continuous ventilation for seven days after completion of application of paint.
  - .4 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
  - .5 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.
  - .6 Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate lighting facilities shall be provided by General Contractor.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Perform no painting work when:
    - .1 ambient air and substrate temperatures are below 10<sup>0</sup>C.
    - .2 substrate temperature is over 32<sup>0</sup>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 the relative humidity is above 85% or when dew point is less than 3<sup>0</sup>C variance between air/surface temperature.
    - .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 concrete and masonry (clay and concrete brick/block).
    - .2 15% for wood.
    - .3 12% for plaster and gypsum board and cement board.
  - .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 only 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 only to adequately prepared surfaces and to surfaces within moisture limits noted herein.
  - .3 Apply paint only when previous coat of paint is dry or adequately cured.
  - .4 Apply paint finishes only when conditions forecast for entire period of application fall within manufacturer's recommendations.
  - .5 Do not apply paint when:
    - .1 Temperature is expected to drop below 10 °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.
  - .6 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.
  - .7 Schedule painting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.
  - .8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.
  - .9 Paint occupied facilities in accordance with approved schedule only. Schedule operations to approval of the Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

## **1.12 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .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. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
- .3 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
- .4 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .5 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:

- .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
- .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
- .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
- .4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
- .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
- .6 Close and seal tightly partly used sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Paint materials listed in the latest edition of the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Paint materials for paint systems shall be products of a single manufacturer.
- .3 Only qualified products with "Environmentally Friendly" rating are acceptable for use on this project.
- .4 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids, shall:
  - .1 be water-based water soluble water clean-up.
  - .2 be non-flammable biodegradable.
  - .3 be manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
- .5 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).
- .6 Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .7 Water-borne surface coatings and recycled water-borne surface coatings must have a flash point of 61.0°C or greater.
- .8 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.

## 2.2 COLOURS

- .1 Departmental Representative will provide Colour Schedule after Contract award.

## 2.3 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site.

## 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 @ 60E/	Units @ 60E/
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 Gloss level ratings of painted surfaces will be G4 – satin finish.

## 2.5 EXTERIOR PAINTING SYSTEMS

- .1 Structural Steel and Metal Fabrications:
  - .1 EXT 5.1E - Waterborne epoxy finish. Gloss level G4
- .2 Galvanized Metal: not chromate passivated
  - .1 EXT 5.3C - Epoxy finish for use in high contact/high traffic areas, Gloss level G4.
- .3 Stainless Steel: unpolished
  - .1 EXT 5.6D – Clear Epoxy finish, gloss level G2.
- .4 Fibreglass: panels, trims, fabrications, etc.
  - .1 EXT 6.7F - Epoxy finish, gloss level G4.

## 2.6 SPECIAL FINISHES:

- .1 All stainless steel exposed flashings to have a velvet finish.

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**Part 3 Execution**

**3.1 GENERAL**

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

**3.2 EXISTING CONDITIONS**

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 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 Departmental Representative. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

**3.3 PROTECTION**

- .1 Protect existing building 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 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 passing pedestrians, building occupants and general public in and about the building.
- .5 Removal of light fixtures, surface hardware on doors, and other surface mounted equipment, fittings and fastenings shall be done prior to undertaking painting operations by General Contractor. Items shall be securely stored and re-installed after painting is completed by General Contractor.
- .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 Departmental Representative.

**3.4 CLEANING AND PREPARATION**

- .1 Clean and prepare exterior surfaces in accordance with MPI Painting Specification Manual requirements. Refer to the MPI Manual in regard to specific requirements and as follows:

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- .1 Remove dust, dirt, and other surface debris by brushing, wiping with dry, clean cloths or compressed air.
  - .2 Wash surfaces with a biodegradable detergent (and bleach where applicable) 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.
  - .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
  - .6 Use trigger operated spray nozzles for water hoses.
  - .7 Many water-based paints cannot be removed with water once dried. However, minimize the use of kerosene or any such organic solvents to clean up water-based paints.
- 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 Where possible, prime surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
  - 4 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.
  - 5 Clean 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. 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 brushing/vacuum cleaning.
  - 6 Touch up of shop primers with primer as specified in applicable section. Major touch-up including cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas, shall be by supplier of fabricated material.
  - 7 Do not apply paint until prepared surfaces have been accepted by the Departmental Representative.

### 3.5 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. New steel doors and frames to be prepainted with an air sprayer before being delivered to the site. All existing overhead doors, frames and track guards and new overhead door replacement panels, to be masked and sprayed on site. For interior gypsum board repair and new steel, use brush and roller application.
- .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 Departmental Representative.
- .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 only when no other method is practical in places of difficult access and only when specifically authorized by Departmental Representative.
- .5 Apply coats 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 coats to remove visible defects.
- .8 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as projecting ledges.
- .9 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

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

- .1 Unless otherwise specified, paint exterior exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as noted otherwise.
- .2 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .3 Do not paint over nameplates.

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- .4 Paint fire protection piping red.
  - .5 Paint steel electrical light standards. Do not paint outdoor transformers and substation equipment.

### **3.7 FIELD QUALITY CONTROL**

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

### **3.8 RESTORATION**

- .1 Clean and re-install all 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 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.

**END OF SECTION**

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**Part 1            General**

**1.1            Related Sections:**

- .1        Section 01 14 10 – Scheduling and Management of Work.
- .2        Section 01 33 00 - Submittal Procedures.
- .3        Section 01 35 29 - Health and Safety Requirements.
- .4        Section 01 45 00 – Testing Quality Control.
- .5        Section 01 61 00 - Common Product Requirements.
- .6        Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .7        Section 01 78 00 - Closeout Submittals.

**1.2            REFERENCES**

- .1        Department of Justice Canada (Jus)
  - .1        Canadian Environmental Protection Act (CEPA)
- .2        Environmental Protection Agency (EPA)
  - .1        EPA 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        Master Painters Institute (MPI)
  - .1        MPI Architectural Painting Specifications Manual.
- .5        National Fire Code of Canada
- .6        Society for Protective Coatings (SSPC)
  - .1        SSPC Painting Manual, Volume Two, 8th Edition, Systems and Specifications Manual.
- .7        Transport Canada (TC)
  - .1        Transportation of Dangerous Goods Act (TDGA).

**1.3            QUALITY ASSURANCE**

- .1        Health and Safety:
  - .1        Do construction occupational health and safety in accordance with Section 01 35 29 - Health and Safety Requirements.

**1.4            SCHEDULING**

- .1        Submit work schedule for various stages of painting to Departmental Representative for review. Submit schedule minimum of 48 hours in advance of proposed operations.

- .2 Obtain written authorization from Departmental Representative for changes in work schedule.
- .3 Schedule painting operations to prevent disruption of occupants.

## 1.5 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit product data and instructions for each paint and coating product to be used.
  - .2 Submit product data for the use and application of paint thinner.
  - .3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOCs during application and curing.
- .3 Samples:
  - .1 Submit full range colour sample chips to indicate where colour availability is restricted.
  - .2 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
  - .3 Manufacturer's Instructions:
    - .1 Submit manufacturer's installation and application instructions.

## 1.6 MAINTENANCE

- .1 Extra Materials:
  - .1 Deliver to extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Section 01 78 00 - Closeout Submittals.
  - .2 Quantity: provide one - four litre can of each type and colour of primer finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
  - .3 Delivery, storage and protection: comply with Departmental Representative requirements for delivery and storage of extra materials.

## 1.7 DELIVERY, STORAGE AND HANDLING

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Pack, ship, handle and unload materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
- .2 Acceptance at Site:
  - .1 Identify products and materials with labels indicating:
    - .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 Storage and Protection:
  - .1 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
- .5 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .6 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.
- .7 Remove paint materials from storage only in quantities required for same day use.
- .8 Fire Safety Requirements:
  - .1 Provide one 9 kg Type ABC 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 National Fire Code of Canada requirements.
- .9 Waste Management and Disposal:
  - .1 Separate waste materials for reuse, and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## 1.8 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
  - .1 Provide heating facilities 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.
  - .2 Provide continuous ventilation for seven days after completion of application of paint.
  - .3 Coordinate use of existing ventilation system with Departmental 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.
  - .5 Provide minimum lighting level of 323 Lux on surfaces to be painted.

- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Unless pre-approved written approval by product manufacturer, perform no painting when:
    - .1 Ambient air and substrate temperatures are below 10 degrees C.
    - .2 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
    - .3 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
    - .4 The relative humidity is under 85 % or when the dew point is more than 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
    - .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
    - .6 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
  - .2 Perform painting work when maximum moisture content of the substrate is below:
    - .1 12 % for cement board and gypsum board.
- .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.
  - .3 Apply paint when previous coat of paint is dry or adequately cured.
- .4 Additional interior application requirements:
  - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.
  - .2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Conform to latest MPI requirements for interior painting work including preparation and priming.

## 2.2 COLOURS

- .1 Departmental Representative will provide Colour Schedule after Contract award.
- .2 Second coat in 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 to site.

## 2.4 GLOSS/SHEEN RATINGS

- .1 Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 - Matte Finish (flat)	Max. 5	Max. 10
Gloss Level 2 - Velvet-Like Finish	Max. 10	10 to 35
Gloss Level 3 - Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 - Satin-Like Finish	20 to 35	min. 35
Gloss Level 5 - Traditional Semi-Gloss Finish	35 to 70	
Gloss Level 6 - Traditional Gloss	70 to 85	
Gloss Level 7 - High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated.

## 2.5 INTERIOR PAINTING SYSTEMS

- .1 Structural steel and metal fabrications: columns, beams, joists:
  - .1 INT 5.1L – Waterborne Epoxy finish gloss level G4.
- .2 Galvanized metal: doors, frames, railings, misc. steel, pipes, overhead decking, and ducts.
  - .1 INT 5.3D - Epoxy finish (over epoxy primer) Gloss level G4.
- .3 Fibreglass: Overhead doors, panels, trims, fabrications:
  - .1 INT 6.7D - Epoxy finish, gloss level G4.
- .4 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock type material", and textured finishes:
  - .1 INT 9.2A – Latex G3 finish (over latex sealer).

## 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 data sheet.

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### 3.2 GENERAL

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

### 3.3 EXAMINATION

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with 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". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 Maximum moisture content as follows:
  - .1 Plaster and gypsum board: 12 %.

### 3.4 PREPARATION

- .1 Protection:
  - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore 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, building occupants in and about the building.
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
  - .1 Remove dust, dirt, and other 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 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.
- .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
- .6 Use trigger operated spray nozzles for water hoses.
- .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.
- .4 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.
- .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 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. 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.
- .7 Touch up of shop primers with primer as specified.
- .8 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.

### 3.5 APPLICATION

- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush roller. Conform to manufacturer's application instructions unless specified otherwise. Interior of new insulated steel personnel doors and frames to be pre spray painted before delivery to site. Interior and exterior colours to be the same.
- .2 Brush and Roller Application:
  - .1 Apply paint in uniform layer using brush and/or roller type 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 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 uniform layer, with overlapping at edges of spray pattern. Back roll first coat application.
  - .4 Brush out immediately all runs and sags.
  - .5 Use brushes and rollers 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.
- .5 Apply coats of paint 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 surfaces both above and below sight lines as specified for surrounding surfaces.
- .9 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

### **3.6 SITE TOLERANCES**

- .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.

### **3.7 FIELD QUALITY CONTROL**

- .1 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.
- .2 Field inspection of painting operations to be carried out by independent inspection firm as designated by Departmental Representative.

- .3 Advise Departmental Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .4 Cooperate with inspection firm and provide access to areas of work.
- .5 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.

### **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 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**

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**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 33 00 - Submittal Procedures.
- .2        Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .3        Section 01 45 00 – Testing Quality Control.
- .4        Section 01 50 00 - Temporary Facilities.

**1.2                SUBMITTALS**

- .1        Manufacturer's Instructions: Provide to indicate special handling criteria, installation sequence, cleaning procedures.

**1.3                PRODUCT DATA**

- .1        Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2        Submit WHMIS MSDS - Material Safety Data Sheets. WHMIS MSDS acceptable to Labour Canada and Health and Welfare Canada for high build glazed coatings. Indicate VOC content.

**1.4                SAMPLES**

- .1        Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2        Submit duplicate 400 x 200 mm samples of each colour and finish.

**1.5                CLOSEOUT SUBMITTALS**

- .1        Provide maintenance data for coatings for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

**1.6                MOCK-UPS**

- .1        Construct mock-ups in accordance with Section 01 45 00 – Testing Quality Control.
- .2        Apply coating of each finish to 5 m<sup>2</sup> area of surface to be treated.
- .3        Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with coating work.
- .4        When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

**1.7                DELIVERY, STORAGE AND HANDLING**

- .1        Deliver and store materials in manner to prevent damage.

- .2 Ensure materials remain in original wrapping and containers until used.

## **1.8 WASTE MANAGEMENT**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal, and with the Waste Reduction Workplan.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Divert unused coating material from landfill to official hazardous material collections site approved by Departmental Representative.
- .5 Do not dispose of unused coating materials into sewer systems, into lakes, streams, onto ground or in other locations where it will pose health or environmental hazard.

## **1.9 ENVIRONMENTAL REQUIREMENTS**

- .1 Safety.
  - .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of materials.
  - .2 Ensure no open flame heating devices are used.
  - .3 Discourage occupancy of treated space until volatile materials are no longer being emitted and there is no odour.
  - .4 Provide adequate respiratory protection to exposed individuals.
- .2 Ventilation.
  - .1 Provide ventilation continuously during and after coating application. Run system 24 hours per day during application; provide continuous ventilation for 7 days after completion of application.
- .3 Temperature.
  - .1 Do not apply emulsion systems unless uniform minimum 10°C air temperature at installation area for 24 hours prior to and after application.
  - .2 Maintain minimum temperature 10 °C within area of installation until final acceptance of building.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Interior high build glazed coating materials: as indicated on drawings.
- .2 Acceptable material:

- .1 Stonset TG5 (Epoxy base grout- 12 mm sloping)
- .2 Stonclad GS (100% epoxy mortar skim coat over grout)
- .3 2 coats Stonkote GS4 with texture 2 by Stonhard epoxy products by Stonhard, integrated 150 mm high cove base in all rooms to receive new epoxy floor.

## **2.2 MIXES**

- .1 Mix coatings according to manufacturer's instructions.

## **Part 3 Execution**

### **3.1 PREPARATION**

- .1 Prepare surfaces in accordance with coating material manufacturer's instructions.
- .2 Mask surrounding surfaces to provide neat, clean juncture lines.
- .3 Protect adjacent surfaces and equipment from damage by overspray.
- .4 The concrete floors to receive new epoxy coatings will be cleaned and prepared by shot blasting (dustless)

### **3.2 APPLICATION**

- .1 Apply one coat of penetrating primer to produce smooth surface, uniform in sheen, colour and finish, free from marks, dirt, particles, runs, crawls, curling, holes, air pockets and other defects and to achieve smoothness index according to manufacturer's recommendations.
- .2 Apply 100% solids epoxy base grout will be installed at 12 mm to create a slight slope for water to flow to the floor drains.
- .3 Apply a 100% solids epoxy mortar to be trowel applied at a nominal 6 mm thickness over the epoxy grout.
- .4 Apply 2 coats of 100 % solids epoxy coating at a nominal 8 ml to 10 ml thickness with texture 2 for each coat to provide non-slip.
- .5 Before installing the integrated epoxy cove base, 150 mm of existing 15 mm gypsum board must be cut and removed at the existing wall/concrete slab in the Buoy Tool Storage Room. This gypsum board will be replaced with 150 mm high cement board around the entire room. In the Forklift and Battery Storage Room, the contractor must screw a 38 mm x 150 mm pressure treated ledger on all outside walls that have the existing galvanized liner panels. The flutes of the liner panels must be filled to 150 mm high with non shrink grout to provide a backing for the integrated epoxy cove base in this room. (The base of the building steel frame in this room will also require this detail.)
- .6 A 12 mm high epoxy curb will be fabricated under the electrical room door and will be coated with a brick red contrasting colour. All other epoxy in all other areas to be Slate Blue.

**3.3 CLEANING**

- .1 Clean surfaces to coating manufacturer's printed instructions.

**END OF SECTION**