

**Part 1 General****1.1 RELATED REQUIREMENTS**

- .1 Section 09 91 23.01 Interior Repainting

**1.2 REFERENCES**

- .1 ASTM International
  - .1 ASTM C475-02(2007), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .2 ASTM C840-13, Standard Specification for Application and Finishing of Gypsum Board.
  - .3 ASTM C954-11, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.84 mm to 2.84 mm in Thickness.
  - .4 ASTM C1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .5 ASTM C1047-09, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .6 ASTM C1396/C1396M-13a, Standard Specification for Gypsum Wallboard.
- .2 Association of the Wall and Ceilings Industries International (AWCI)
  - .1 AWCI Levels of Gypsum Board Finish-97.
- .3 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations (including Addendum 2007).
  - .2 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
- .4 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .5 Green Seal Environmental Standards (GS)
  - .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1113-A2013, Architectural Coatings.
  - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

- .7 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S102-07, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.

### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Sustainable Design Submittals:
  - .1 LEED Canada-NC Version 1.0 CI Version 1.0 Submittals: in accordance with Section 01 35 21 - LEED Requirements.
  - .2 Construction Waste Management:
    - .1 Submit project Waste Management Plan Waste Reduction Workplan highlighting recycling and salvage requirements.
    - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.
  - .3 Recycled Content:
    - .1 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer post-industrial content, and total cost of materials for project.
  - .4 Regional Materials: submit evidence that project incorporates required percentage 20 % of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
  - .5 Low-Emitting Materials:
    - .1 Submit listing of adhesives and sealants paints and coatings used in building, showing compliance with VOC and chemical component limits or restriction requirements.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store gypsum board assemblies materials level indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect gypsum board assemblies from nicks, scratches, and blemishes.

- .3 Protect from weather, elements and damage from construction operations.
- .4 Handle gypsum boards to prevent damage to edges, ends or surfaces.
- .5 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan Waste Reduction Workplan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management.

## 1.5 AMBIENT CONDITIONS

- .1 Maintain temperature 10 degrees C minimum, 21 degrees C maximum for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimum 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.

## Part 2 Products

### 2.1 MATERIALS

#### .1 Non-structural Metal Framing:

- .1 Non-load bearing channel stud framing: to ASTM C645], stud size varies to suit existing conditions being repaired, roll formed from 0.53 mm thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at 460 mm centres.
- .2 Floor and ceiling tracks: to ASTM C645, in widths to suit stud sizes, 32 mm flange height.

#### .2 Gypsum Board:

- .1 Standard board: to ASTM C1396/C1396M regular, 16 mm thick Type X or as required to provide a flush finish with adjacent construction, 1200 mm wide x maximum practical length, ends square cut, edges rounded squared bevelled T G.
- .2 Metal furring runners, hangers, tie wires, inserts, anchors: to .
- .3 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .4 Resilient clips drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .5 Steel drill screws: to ASTM C1002.
- .6 Stud adhesive: to CAN/CGSB-71.25 ASTM C557.
- .7 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, zinc-coated by hot-dip process, 0.5 mm base thickness, perforated flanges, one piece length per location.

**2.2 ACCESSORIES**

- .1 Sealants:
  - .1 VOC limit 250 g/L maximum to SCAQMD Rule 1168.
  - .2 Acoustic sealant: to ASTM C919, suitable for use with polyethylene to form continuous vapour diffusion retarder
- .2 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .3 Insulating strip: rubberized, moisture resistant, 3 mm thick cork closed cell neoprene strip, 12 mm wide, with self sticking permanent adhesive on one face, lengths as required.
- .4 Joint compound: to ASTM C475, asbestos-free.

**2.3 FINISHES**

- .1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.
  - .1 Primer: VOC limit 50 g/L maximum to SCAQMD Rule 1113.

**Part 3 Execution****3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of existing substrates are acceptable for gypsum board assemblies installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

**3.2 ERECTION OF FRAMING**

- .1 Install steel framing members to receive screw-attached gypsum board in accordance with [ASTM C754] except where specified otherwise.
- .2 Align partition tracks at floor and ceiling and secure at [600] mm on centre maximum.
- .3 Place studs vertically at [400] mm on centre and maximum of [50] mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.

- .6 Include two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, [50] mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
- .7 Install heavy gauge single jamb studs at openings.
- .8 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .9 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .10 Extend partitions to slab above where repairs to existing perimeter wall are required.
- .11 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use double track slip joint.
- .12 Install continuous insulating strips to isolate studs from uninsulated surfaces.

### 3.3 ERECTION OF GYPSUM BOARD

- .1 Do application and finishing of gypsum board to ASTM C840 except where specified otherwise.
- .2 Do application of gypsum sheathing to ASTM C1280.
- .3 Install work level to tolerance of 1:1200.
- .4 Frame with furring channels, perimeter of openings .
- .5 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .6 Install wall furring for gypsum board wall finishes to ASTM C840, except where specified otherwise.
- .7 Erect drywall resilient furring transversely across studs joists between the layers of gypsum board, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with 38 mm common nail 25 mm drywall screw.
- .8 Install 150 mm continuous strip of 12.7 mm gypsum board along base of partitions where resilient furring installed.

### 3.4 APPLICATION

- .1 Apply gypsum board after bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been reviewed.
- .2 Apply single layer gypsum board to wood metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
  - .1 Single-Layer Application:
    - .1 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
- .3 Apply single layer gypsum board to concrete block 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.
- .4 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, , in partitions where perimeter sealed with acoustic sealant.
- .5 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.
- .6 Install gypsum board with face side out.
- .7 Do not install damaged or damp boards.
- .8 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

### 3.5 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 using contact adhesive for full length at 150 mm on centre.
- .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 Splice corners and intersections together and secure to each member with 3 screws.
- .5 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.
- .6 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with AWCI Levels of Gypsum Board Finish:
  - .1 Levels of finish:
    - .1 Level 4: embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
- .7 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.
- .8 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.
- .9 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .10 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

- .11 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.
- .12 Mix joint compound slightly thinner than for joint taping.
- .13 Apply thin coat to entire surface using trowel or drywall broad knife to fill surface texture differences, variations or tool marks.
- .14 Allow skim coat to dry completely.
- .15 Remove ridges by light sanding or wiping with damp cloth.

### **3.6 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 00 10 – General Instructions.
  - .1 Leave Work area clean at end of each day.
  - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 00 10 – General Instructions.
- .2 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### **3.7 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by gypsum board assemblies installation.

### **3.8 SCHEDULE**

- .1 Repair, reconstruct or reinstate perimeter partitions that may be damaged or removed in the demolition process.

**END OF SECTION**

**Part 1 General****1.1 REFERENCES**

- .1 The Master Painters Institute (MPI)
  - .1 Maintenance Repainting Manual, current edition, Master Painters Institute (MPI), including Identifiers, Evaluation, Systems, Preparation and Approved Product List.
- .2 Environmental Protection Agency (EPA)
  - .1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings).
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .4 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1113-13, Architectural Coatings.

**1.2 QUALITY ASSURANCE**

- .1 Conform to latest MPI requirements for interior repainting work including cleaning, preparation and priming.
- .2 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners and solvents) shall be in accordance with the latest edition of the MPI Approved Product List and shall be from a single manufacturer for each system used.
- .3 Paint materials such as linseed oil, shellac, reducers and turpentine shall be the highest quality product of an approved manufacturer listed in MPI Maintenance Repainting Manual and shall be compatible with other coating materials as required.
- .4 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.
- .5 Standard of Acceptance: when viewed using final lighting source surfaces shall indicate the following:
  - .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
  - .2 Final coat to exhibit uniformity of colour and sheen across full surface area.

**1.3 PERFORMANCE REQUIREMENTS**

- .1 Environmental Performance Requirements:
  - .1 Provide paint products meeting MPI "Environmentally Friendly" E2 or E3 ratings based on VOC (EPA Method 24) content levels..

**1.4 SCHEDULING**

- .1 Submit work schedule for various stages of painting to Departmental Representative for approval.
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- .2 Paint occupied facilities in accordance with approved schedule. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.
- .3 Obtain written authorization from Departmental Representative for changes in work schedule.
- .4 Schedule repainting operations to prevent disruption by other trades if applicable and by occupants in and about building.

## **1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide product data and manufacturer's installation/application instructions for each paint and coating product to be used in accordance with the requirements of Section 01 33 00 - Submittal Procedures.
- .2 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Submit full range colour sample chips for review and selection. Indicate where colour availability is restricted.
  - .2 Submit WHMIS MSDS - Material Safety Data Sheets for paint and coating materials in accordance with Section 01 00 10 – General Instructions
- .3 Closeout Submittals:
  - .1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
    - .1 Submit records of products used. List products in relation to finish system and include following:
      - .1 Product name, type and use (i.e. materials and location).
      - .2 Manufacturer's product number.
      - .3 Colour code numbers.
      - .4 MPI Environmentally Friendly classification system rating.
      - .5 Manufacturer's Material Safety Data Sheets (MSDS).

## **1.6 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials as follows:
    - .1 Deliver and store materials in original containers, sealed, with labels intact.
    - .2 Labels to indicate:
      - .1 Manufacturer's name and address.
      - .2 Type of paint or coating.
      - .3 Compliance with applicable standard.
      - .4 Colour number in accordance with established colour schedule.
    - .3 Remove damaged, opened and rejected materials from site.
    - .4 Store and handle in accordance with manufacturer's recommendations.
    - .5 Store materials and equipment in secure, dry, well-ventilated area with temperature range between 7 degrees C to 30 degrees C. Store materials and supplies away from heat generating devices and sensitive products above minimum temperature as recommended by manufacturer.
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- .6 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Departmental Representative. After completion of operations, return areas to clean condition to approval of Departmental Representative.
  - .7 Remove paint materials from storage in quantities required for same day use.
  - .8 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
  - .9 Fire Safety Requirements:
    - .1 Provide one 9 kg Type ABC or dry chemical fire extinguisher as recommended by manufacturer 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 daily.
    - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada.
  - .2 Waste Management and Disposal:
    - .1 Separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
    - .2 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are 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 Materials that 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. In no case shall equipment be cleaned using free draining water.
      - .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 cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
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- .6 Where paint recycling is available, collect waste materials by type and provide for delivery to recycling or collection facility.
- .7 Set aside and protect surplus and uncontaminated finish materials: . Deliver to or arrange collection by employees, individuals, or organizations for verifiable re-use or re-manufacturing.

## 1.7 SITE CONDITIONS

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

- .5 Test all existing paint surfaces to determine if latex or alkyd and provide plans marked up to indicate location of existing alkyd surfaces at time of submitting action and information submittals, highlighting existing surfaces whose type (alkyd/latex) is not as indicated in tender documents.

## **1.8 MAINTENANCE**

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

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Paint materials listed in latest edition of MPI Approved Product List (APL) are acceptable for use on this project.
- .2 Where required by authorities having jurisdiction, paints and coatings to provide a fire resistant rating.
- .3 Paint materials for repaint systems to be products of single manufacturer.
- .4 Only qualified products with MPI "Environmentally Friendly" E2 or E3 rating are acceptable for use on this project.

### **2.2 COLOURS**

- .1 Colour shall be white.

### **2.3 MIXING AND TINTING**

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

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

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

Gloss Level Category	Units @ 60 Degrees	Units @ 85 Degrees
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G1 - matte finish	0 to 5	maximum 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	minimum 35
G5 - semi-gloss finish	35 to 70	
G6 - gloss finish	70 to 85	
G7 - high gloss finish	85	

- .2 Gloss level ratings of repainted surfaces shall be as specified herein as noted on Finish Schedule.

## 2.5 INTERIOR PAINTING SYSTEMS

- .1 RIN 9.2 - Plaster and Gypsum Board: (gypsum wallboard, drywall, and "sheet rock type material").
- .1 RIN 9.2B - High Performance Architectural Latex, first (primer) coat only, G3 finish (walls), G2 finish (ceilings)

## Part 3 Execution

### 3.1 MANUFACTURER'S INSTRUCTIONS

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

### 3.2 EXAMINATION

- .1 Interior surfaces requiring repainting: inspected by painting contractor who will notify Departmental Representative in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.
- .2 Where an 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.

### 3.3 PREPARATION

- .1 Perform preparation and operations for interior painting in accordance with MPI Maintenance Repainting Manual requirements except where otherwise specified.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.
- .3 Clean and prepare interior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
- .1 Remove dust, dirt, and surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
- .2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using stiff bristle brush to remove dirt, oil and surface contaminants.

- .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
- .4 Allow surfaces to drain completely and to dry thoroughly. Allow sufficient drying time and test surfaces using an electronic moisture meter before commencing work.
- .5 Use water-based cleaners in place of organic solvents where surfaces will be repainted using water based paints.
- .6 Many water-based paints cannot be removed with water once dried. Minimize use of kerosene or such organic solvents to clean up water-based paints.
- .4 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminants from surfaces, pockets and corners to be repainted by brushing with clean brushes, blowing with clean dry compressed air, or brushing/vacuum cleaning as required. Existing metal convector enclosures shall be sanded to remove existing gloss.
- .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.
- .6 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.
- .7 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from distance up to 1000 mm.

### 3.4 EXISTING CONDITIONS

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

Condition	Description
DSD-0	Sound Surface ( includes visual (aesthetic) defects that do not affect film's protective properties).
DSD-1	Slightly Deteriorated Surface (indicating fading; gloss reduction, slight surface contamination, minor pin holes scratches).
DSD-2	Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, and staining).
DSD-3	Severely Deteriorated Surface (heavy peeling,

	flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
DSD-4	Substrate Damage (repair or replacement of surface required).

### 3.5 PROTECTION

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

### 3.6 APPLICATION

- .1 Apply paint by method that is best suited for substrate being repainted using brush or roller. Conform to manufacturer's application instructions unless specified otherwise. Methods of application as pre-approved by Departmental Representative before commencing work.
- .2 Brush and Roller Application:
  - .1 Apply paint in uniform layer using brush and/or roller of types suitable for application.
  - .2 Work paint into cracks, crevices and corners.
  - .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
  - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple unless approved by Departmental Representative.
  - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 Use dipping, sheepskins or daubers when no other method is practical in places of difficult access and when specifically authorized by Departmental Representative.
- .4 Apply paint coats in continuous manner and allow surfaces to dry and properly cure between coats for minimum time period as recommended by manufacturer. Minimum dry film thickness of coats not less than that recommended by manufacturer. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Sand and dust between coats to remove visible defects.

- .6 Repaint surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .7 Repaint top, bottom, and vertical edges of doors to be repainted.
- .8 Repaint inside of cupboards and cabinets as specified for outside surfaces.
- .9 Repaint closets and alcoves to match existing, unless otherwise scheduled or noted.

### **3.7 MECHANICAL/ELECTRICAL EQUIPMENT**

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

### **3.8 FIELD QUALITY CONTROL**

- .1 Inspection:
- .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.

### **3.9 CLEANING**

- .1 Proceed in accordance with Section 01 00 10 – General Instructions, supplemented as follows:
  - .1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
  - .2 Keep work area free from unnecessary accumulation of tools, equipment, surplus materials and debris.
  - .3 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.
  - .4 Clean equipment and dispose of wash water used for water borne materials, solvents used for oil based materials as well as other cleaning and protective materials (e.g. rags, drop cloths, and masking papers), paints, thinners, paint



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

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

### **3.10 RESTORATION**

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

**END OF SECTION**

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