

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 10 00 - Rough Carpentry.
- .2 Section 07 21 16 - Blanket Insulation.
- .3 Section 09 91 00 - Painting.

### **1.02 REFERENCES**

- .1 Aluminum Association (AA)
  - .1 AA DAF 45-03(R2009), Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials (ASTM)
  - .1 ASTM C475-015), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .2 ASTM C514-04(2014), Standard Specification for Nails for the Application of Gypsum Board.
  - .3 ASTM C557-03(2009)e1, Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
  - .4 ASTM C840-16, Standard Specification for Application and Finishing of Gypsum Board.
  - .5 ASTM C954-15, Standard 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.
  - .6 ASTM C1002-14, 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.
  - .7 ASTM C1047-14a, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .8 ASTM C1177/C1177M-13, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
  - .9 ASTM C1178/C1178M-13, Standard Specification for Glass Mat Water-Resistant Gypsum Backing Board.
  - .10 ASTM C1280-13a, Standard Specification for Application of Gypsum Sheathing.
  - .11 ASTM C1396/C1396M-14a, Standard Specification for Gypsum board.

- .3 Association of the Wall and Ceilings Industries International (AWCI)
  - .1 AWCI Levels of Gypsum Board Finish-GA-214-2015.
- .4 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1113-16, Architectural Coatings.
  - .2 SCAQMD Rule 1168-A2011, Adhesives and Sealants Applications.
- .5 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC S102-10, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.

### **1.03 ACTION AND INFORMATION 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 Samples:
  - .1 Submit for review and acceptance of each component specified or necessary for complete installation. Include technical descriptive data.
  - .2 Submit duplicate 300 mm long samples of corner and casing beads, mouldings, shadow mould, cornice cap, and insulating strip.
  - .3 Samples will be returned for inclusion into work.
- .4 Certifications:
  - .1 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and 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 and applicable standard designation.
- .3 Exercise care in unloading gypsum board materials shipment to prevent damage.
- .4 Storage and Handling Requirements in accordance with ASTM C840:
  - .1 Store gypsum board assemblies materials level, flat, 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 damage and nicks, scratches, and blemishes.
  - .3 Protect gypsum board from direct exposure to rain, snow, sunlight, or other excessive weather conditions.
  - .4 Protect ready mix joint compounds from freezing, exposure to extreme heat and direct sunlight.
  - .5 Protect from weather, elements and damage from construction operations.
  - .6 Handle gypsum boards to prevent damage to edges, ends or surfaces.
  - .7 Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
  - .8 Replace defective or damaged materials with new.

#### **1.05 AMBIENT CONDITIONS**

- .1 Maintain temperature 10 °C minimum, 21 °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, clean, 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.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Standard Board: to ASTM C1396/C1396M, regular 16 mm thick or as otherwise indicated, and Type 'X' and Type 'C', 120 mm wide x maximum practical length, ends square cut.
- .2 Water Resistant Board: to ASTM C1396/C1396M, regular and Type 'X' and Type 'C', 16 mm thick or as otherwise indicated, 1200 mm wide x maximum practical length.
- .3 Metal furring runners, hangers, tie wires, inserts, anchors as required.
- .4 Drywall furring channels: 0.75 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .5 Resilient clips and drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .6 Nails: to ASTM C514.
- .7 Steel drill screws: to ASTM C1002.
- .8 Wood stud adhesive: to ASTM C557.
- .9 Laminating compound: as recommended by manufacturer, asbestos-free.
- .10 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, PVC, perforated flanges, one piece length per location.
- .11 Cornice cap: 12.7 mm deep x partition width, of 1.6 mm base thickness galvanized sheet steel, prime painted. Include splice plates for joints.
- .12 Strippable Edge Trim: Extruded PVC with pre-masked L-shaped tape on trim with tear away protective serrated strip for removal after compound and paint is applied, for use at areas where gypsum butts aluminum frames and where gypsum butts concrete or concrete block.
- .13 Sealants: to Section 07 92 00 - Joint Sealants.

- .14 Partition Wall Insulation: to Section 07 21 16 - Blanket Insulation.
- .15 VOC limit 250 g/L maximum to SCAQMD Rule 1168.
- .16 Acoustic sealant: in accordance with Section 07 92 00 - Joint Sealants.
- .17 Insulating Strip / Acoustic Strip: rubberized, moisture-resistant, 3 mm thick closed cell neoprene strip, or 8 mm thick open cellular rubber reinforced with solid rubber particles bonded to cellulose, full width of wood surface in contact with concrete, with self-sticking permanent adhesive on one face, lengths as required.
- .18 Joint compound: to ASTM C475, asbestos-free.

## **2.02 FINISHES**

- .1 Gypsum Board Joint Treatment: All exposed gypsum board for this Contract shall receive minimum AWCI Level 4 finish.
- .2 Painting: in accordance with Section 09 91 00 - Painting.
  - .1 VOC limit to GS-11 and SCAQMD Rule 1113 criteria.

## **3 EXECUTION**

### **3.01 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts 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.

### **3.02 ERECTION**

- .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 Erect hangers and runner channels for suspended gypsum board ceilings to ASTM C840 except where specified otherwise.
- .4 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .5 Install work level to tolerance of 1:1200.
- .6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, and grilles.
- .7 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .8 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .9 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.
- .10 Install wall furring for gypsum board wall finishes to ASTM C 840-16, except where specified otherwise.
- .11 Furr openings and around built-in equipment, cabinets, and access panels on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .12 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .13 Erect drywall resilient furring transversely across studs, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with 25 mm drywall screw.
- .14 Install 150 mm continuous strip of 13 mm gypsum board along base of partitions where resilient furring installed.

### 3.03 APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.

- .2 Apply single to wood furring or framing using screw fasteners for first layer, laminating adhesive for second 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.
- .3 Apply 13 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.
- .4 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.
- .5 Install gypsum board with face side out.
- .6 Do not install damaged or damp boards.
- .7 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

### **3.04 INSTALLATION**

- .1 Gypsum wall sheathing board shall be mechanically fastened to supporting assembly independent of insulation, with joints either backed or taped and filled.
- .2 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.
- .3 Install casing beads around perimeter of suspended ceilings.

- .4 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .5 Slice corners and intersections together and secure to each member with 3 screws.
- .6 Install access doors to electrical and mechanical fixtures specified in respective sections.
  - .1 Rigidly secure frames to furring or framing systems.
- .7 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.
- .8 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with AWCI GA-214, Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels:
  - .1 Levels of finish:
    - .1 Level 0: no tapping, finishing or accessories required.
    - .2 Level 1: embed tape for joints and interior angles in joint compound. Surfaces to be free of excess joint compound; tool marks and ridges are acceptable.
    - .3 Level 2: embed tape for joints and interior angles in joint compound and apply one separate coat of joint compound over joints, angles, fastener heads and accessories; surfaces free of excess joint compound; tool marks and ridges are acceptable.
    - .4 Level 3: embed tape for joints and interior angles in joint compound and apply two separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
    - .5 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.

- .9 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.
- .10 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.
- .11 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .12 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
- .13 Mix joint compound slightly thinner than for joint taping.
- .14 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.
- .15 Remove ridges by light sanding or wiping with damp cloth.
- .16 Provide protection that ensures gypsum drywall work will remain without damage or deterioration at time of substantial completion.

### **3.05 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .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 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and 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.

### **3.06 PROTECTION**

- .1 Protect installed products and components from damage during construction.

- .2 Repair damage to adjacent materials caused by gypsum board assemblies installation.

### **3.07 SCHEDULES**

- .1 Install board as indicated, and as follows:
  - .1 Standard Board: 16 mm thick, general use unless otherwise specified.
  - .2 Water Resistant Board: 16 mm thick, inside face of exterior walls, adjacent to sinks and basins, and at plumbing walls.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 10 00 - Rough Carpentry.
- .2 Section 06 20 00 - Finish Carpentry
- .3 Section 09 21 16 - Gypsum Board Assemblies.

### **1.02 REFERENCES**

- .1 ASTM International Inc.
  - .1 ASTM B117-16 Standard Practice for Operating Salt Spray (Fog) Apparatus.
  - .2 ASTM C67-14 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
  - .3 ASTM C1305-08 Standard Test Method for Crack Bridging Ability of Liquid-Applied Waterproofing Membrane.
  - .4 ASTM D16-16 Standard Terminology for Paint, Related Coatings, Materials, and Applications.
  - .5 ASTM D610-08(2012) Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces.
  - .6 ASTM D714-02(2009) Standard Test Method for Evaluating Degree of Blistering of Paints.
  - .7 ASTM D968-15 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.
  - .8 ASTM D1308-02(2013) Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
  - .9 ASTM D2565-99(2008) Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications.
  - .10 ASTM D2794-93(2010) Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
  - .11 ASTM D3273-16 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
  - .12 ASTM D3274-09(2013) Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth, or Soil and Dirt Accumulation.
  - .13 ASTM D6940-10 Standard Practice for Measuring Sifting Segregation Tendencies of Bulk Solids.
  - .14 ASTM E96/E96M-16 Standard Test Methods for Water Vapor Transmission of Materials.

- .2 Green Seal Environmental Standards
  - .1 Standard GS-11, Paints, Coatings, Stains, and Sealers, Edition 3.2, October 26, 2015.
  - .2 Green Seal Standard GC-03, Anti-Corrosive Paints.
- .3 Department of Justice Canada (Jus)
  - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
- .4 Environmental Protection Agency (EPA)
  - .1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, EPA Method 24 - Surface Coatings.
  - .2 SW-846, Test Method for Evaluating Solid Waste, Physical/Chemical Methods.
- .5 Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - 2017.
  - .2 Standard GPS-1-17, MPI Green Performance Standard.
  - .3 Standard GPS-2-17, MPI Green Performance Standard
- .6 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1113-16, Architectural Coatings.
- .7 Society for Protective Coatings (SSPC)
  - .1 SSPC Painting Manual, Volumes 1 & 2, 2011 Edition.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

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

### **1.04 ACTION AND INFORMATION 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 paint and coating products and include product characteristics, performance criteria, physical size, finish and limitations.

- .2 Submit 2 copies of WHMIS MSDS.
- .3 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

#### **1.05 CLOSEOUT SUBMITTALS**

- .1 Provide in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: Provide operation and maintenance data for painting materials for incorporation into manual.
- .3 Include :
  - .1 Product name, type and use.
  - .2 Manufacturer's product number.
  - .3 Colour numbers.
  - .4 MPI Environmentally Friendly classification system rating.

#### **1.06 MAINTENANCE MATERIAL SUBMITTALS**

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

#### **1.07 QUALITY ASSURANCE**

- .1 Painting Trade Contractor: Provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.
  - .1 Journeymen: qualified journeymen who have "Tradesman Qualification Certificate of Proficiency" engaged in painting work.
  - .2 Apprentices: working under direct supervision of qualified trades person in accordance with trade regulations.

### **1.08 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and 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 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store painting materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well ventilated area within temperature as recommended by manufacturer.
- .4 Fire Safety Requirements:
  - .1 Supply 1 x 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.

### **1.09 SITE CONDITIONS**

- .1 Heating, Ventilation and Lighting:
  - .1 Ventilate enclosed spaces in accordance with Section 01 51 00 - Temporary Utilities.
  - .2 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
  - .3 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Apply paint finishes when ambient air and substrate temperatures at location of installation can be satisfactorily maintained during application and drying process, within MPI and paint manufacturer's prescribed limits.

- .2 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Apply paint to adequately prepared surfaces, when moisture content is below paint manufacturer's prescribed limits.
- .3 Additional application requirements:
  - .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 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.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Supply paint materials for paint systems from single manufacturer.
- .2 Conform to latest MPI requirements for painting work including preparation and priming.
- .3 Materials in accordance with MPI - Architectural Painting Specification Manual "Approved Product" listing.
  - .1 Only qualified products with E2 "Environmentally Friendly" ratings are acceptable for use on this project, Use E3 rated products where available
  - .2 Use only MPI listed L-rated materials.
  - .3 Recycled water borne surface coatings to contain 50% post consumer material by volume.
  - .4 Linseed oil, shellac, and turpentine: highest quality product from approved manufacturer listed in MPI Architectural Painting Specification Manual, compatible with other coating materials as required.
- .4 Recycled water borne surface coatings must not contain:
  - .1 Lead in excess of 600.0 ppm weight/weight total solids.
  - .2 Mercury in excess of 50.0 ppm weight/weight total product.
  - .3 Cadmium in excess of 1.0 ppm weight/weight total product.

- .4 Hexavalent chromium in excess of 3.0 ppm weight/weight total product.
- .5 Organochlorines or polychlorinated biphenyls (PCBS) in excess of 1.0 ppm weight/weight total product.
- .5 VOC limits for architectural paints and coatings applied to interior surfaces in accordance with Green Seal Standard GS-11 and as follows:
  - .1 Interior Flat Coating or Primer: maximum VOC limit 50 g/L.
  - .2 Interior Non-Flat Coating or Primer: maximum VOC limit 150 g/L.
- .6 VOC limits for anti-corrosive and anti-rust paints applied to interior ferrous metal substrates in accordance with Green Seal Standard GS-03 and as follows:
  - .1 Anti-Corrosive/Anti-Rust Paint: maximum VOC limit 250 g/L.
- .7 VOC limits for wood finishes, floor coatings, stains, primers and shellacs applied to interior elements in accordance with SCAQMD Rule 113 and as follows:
  - .1 Floor Coatings: maximum VOC limit 100 g/L.
  - .2 Sealers and Undercoaters: maximum VOC limit 200 g/L.
  - .3 Shellac - Clear: maximum VOC limit 730 g/L.
  - .4 Shellac - Pigmented: maximum VOC limit 550 g/L.
  - .5 Stain: maximum VOC limit 250 g/L.
  - .6 Pigmented Lacquer: maximum VOC limit 550 g/L.
  - .7 Low-Solids Coatings: maximum VOC limit 120 g/L.
- .8 Colours:
  - .1 Submit proposed Colour Schedule to Departmental Representative for review; do not order materials or proceed with work until selections have been reviewed and approved by Departmental Representative.
  - .2 Colours will be selected by Departmental Representative from manufacturer's full range; the number of different colours required for the project is not expected to exceed 4 colours overall; some rooms may require a feature wall painted a different colour than the remaining walls, so assume one feature wall per room space; associated painted trim to match adjacent wall.
  - .3 Minimum number of coats shall be three: primer and two topcoats, minimum, plus additional as required to achieve opaque, uniform colour.
  - .4 Second coat in three-coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

- .9 Mixing and tinting:
  - .1 Perform colour tinting operations prior to delivery of paint to site, in accordance with manufacturer's written recommendations. Obtain written approval from Departmental Representative for tinting of painting materials.
  - .2 Use and add thinner in accordance with paint manufacturer's recommendations.
    - .1 Do not use kerosene or similar organic solvents to thin water-based paints.
  - .3 Thin paint for spraying in accordance with paint manufacturer's written recommendations.
  - .4 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.

.10 Gloss/sheen ratings:

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

<b>Description / Gloss Level</b>	<b>Gloss @ 60 degrees</b>	<b>Sheen @ 85 degrees</b>
G1 - Matte Finish (flat)	Max. 5	Max. 10
G2 - Velvet-Like Finish	Max. 10	10 to 35
G3 - Eggshell Finish	10 to 25	10 to 35
G4 - Satin-Like Finish	20 to 35	min. 35
G5 - Traditional Semi-Gloss Finish	35 to 70	
G6 - Traditional Gloss	70 to 85	
G7 - High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated or otherwise specified.
- .11 Exterior painting (all systems shall be 3-coat, with primer, first topcoat and second topcoat):
    - .1 Dressed Lumber:
      - .1 EXT 6.3H - Pigmented polyurethane finish.
  - .12 Interior painting (all systems shall be 3-coat, with primer, first topcoat and second topcoat):
    - .1 Structural Steel and Metal Fabrications:
      - .1 INT 5.1U - Polyurethane, Pigmented finish (over H.B. self-priming epoxy) finish.

- .2 Dimension lumber: columns, beams, exposed joists, underside of decking:
  - .1 INT 6.2N - Polyurethane, Clear, Moisture cured - G6 gloss level (over S.B. stain) finish.
- .3 Plaster and gypsum board:
  - .1 INT 9.2B - High performance architectural latex G3 gloss level (over latex primer/sealer) finish.

### **3 EXECUTION**

#### **3.01 GENERAL**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheets.
- .2 Perform preparation and operations for interior painting in accordance with MPI - Architectural Painting Specifications Manual except where specified otherwise.

#### **3.02 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.

#### **3.03 PREPARATION**

- .1 Protection of in-place conditions:
  - .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.
- .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.
  - .4 Clean and prepare surfaces in accordance with MPI - Architectural Painting Specification Manual specific requirements and coating manufacturer's recommendations.
  - .5 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 pre-treatment as soon as possible after cleaning and before deterioration occurs.
  - .6 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
    - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
    - .2 Apply wood filler to nail holes and cracks.
    - .3 Tint filler to match stains for stained woodwork.
  - .7 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.
  - .8 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.
  - .9 Touch up of shop primers with primer as specified.

### 3.04 APPLICATION

- .1 Paint only after prepared surfaces have been accepted by Departmental Representative.
- .2 Use method of application approved by Departmental Representative.
  - .1 Conform to manufacturer's application recommendations.
- .3 Apply coats of paint in continuous film of uniform thickness.
  - .1 Repaint thin spots or bare areas before next coat of paint is applied.
- .4 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .5 Sand and dust between coats to remove visible defects.
- .6 Finish 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 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .8 Finish closets and alcoves as specified for adjoining rooms.
- .9 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.
- .10 Mechanical/Electrical Equipment:
  - .1 Paint ceiling-mounted return/supply diffusers; finish colour as selected by Departmental Representative; confirm colour prior to ordering materials.
  - .2 Unless otherwise specified or noted, paint all "unfinished" conduits, piping, hangers, ductwork and other mechanical and electrical equipment with color and texture to match adjacent surfaces, in the following areas:
    - .1 where exposed-to-view in all exterior and interior areas.
    - .2 in all interior high humidity interior areas.

- .3 in all boiler room, mechanical and electrical rooms.
- .3 In unfinished areas leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .5 Do not paint over nameplates.
- .6 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .7 Paint red or band all fire protection piping and sprinkler lines in accordance with mechanical specification requirements. Keep sprinkler heads free of paint.
- .8 Paint yellow or band all natural gas piping in accordance with mechanical specification requirements.
- .9 Back-prime and paint face and edges of plywood service panels for telephone and electrical equipment before installation to match adjacent wall surface. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.
- .10 Paint exterior steel electrical light standards. Do not paint outdoor transformers and substation equipment.

### **3.05 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .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 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and 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.

- .4 Place paint, stains and primer defined as hazardous or toxic waste, including tubes and containers, in containers or areas designated for hazardous waste.

### **3.06 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by work of this Section.

**END OF SECTION**