

## 1 GENERAL

### 1.01 RELATED REQUIREMENTS

- .1 Section 06 10 00 - Rough Carpentry.
- .2 Section 09 91 00 - Painting.
- .3 Section 10 28 10 - Toilet and Bath Accessories.

### 1.02 REFERENCE STANDARDS

- .1 Aluminum Association (AA)
  - .1 AA DAF 45-03(R2009), Designation System for Aluminum Finishes.
- .2 ASTM International
  - .1 ASTM C475/C475M-15, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .2 ASTM C840-16, Specification for Application and Finishing of Gypsum Board.
  - .3 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.
  - .4 ASTM C1002-14, 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 C1047-14a, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .6 ASTM C1325-14 Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units.
  - .7 ASTM C1396/C1396M-14, Standard Specification for Gypsum Board.
  - .8 ASTM C1780-16a, Standard Practice for Installation Methods for Adhered Manufactured Stone Masonry Veneer.
  - .9 ASTM D4397-16, Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
- .3 Association of the Wall and Ceilings Industries International (AWCI)
  - .1 GA-214-2015, Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels.
- .4 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S102-07, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.

### **1.03 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 technical datasheets for gypsum board assemblies and accessories, and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.
  - .3 Submit duplicate 300 x 300 mm size samples of corner and casing beads, mouldings, cornice cap, insulating strip.

### **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.
- .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 damage.
  - .3 Protect from weather, elements and damage from construction operations.
  - .4 Handle gypsum boards to prevent damage to edges, ends or surfaces.
  - .5 Protect prefinished aluminum surfaces with wrapping or strippable coating. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
  - .6 Replace defective or damaged materials with new.

### **1.05 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.

## 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', 19 mm thick or as otherwise indicated, 1200 mm wide x maximum practical length, ends square cut.
- .2 Mould Resistant Board: to ASTM C1396/C1396M, regular 16 mm thick or as otherwise indicated, and T Type 'X' and Type 'C', 19 mm thick or as otherwise indicated, 1200 mm wide x maximum practical length.
- .3 Gypsum shaft liner board: to ASTM C1658/C1658M, ULC fire rated, fibreglass faced, maximum permissible length and width, 25 mm or thickness to suit manufacturers standard system and fire rating indicated on Drawings, square ends.
- .4 Cement board, exterior grade: to ASTM C1325, approved for use in masonry veneer construction to ASTM C1780, size: 1200 mm x maximum practical length, thickness: as indicated on Drawings
- .5 Metal furring runners, hangers, tie wires, inserts, anchors as required.
- .6 Drywall furring channels: 0.75 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .7 Resilient clips and drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .8 Nails: to ASTM C514.
- .9 Steel drill screws: to ASTM C 1002.
- .10 Laminating compound: as recommended by manufacturer, asbestos-free.
- .11 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, PVC, perforated flanges, one piece length per location.
- .12 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.
- .13 Shadow mould: 35 mm high, snap-on trim, of extruded PVC plastic, colour as selected by Departmental Representative.

- .14 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.
- .15 Sealants: in accordance with Section 07 92 00 - Joint Sealants.
  - .1 VOC limit 250 g/L maximum to SCAQMD Rule 1168.
  - .2 Acoustic sealant: in accordance with Section 07 92 00 - Joint Sealants.
- .16 Shaft Wall Framing System: to ASTM C645 manufacturer's standard shaft wall steel framing system having ASTM A653M, Z180, hot-dip galvanized zinc coating; minimum steel thickness of 0.46 mm thick or heavier as required by detailed design required for indicated spans; including head and bottom rails, channels, trim and accessories required for a complete installation.
- .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, minimum 28 mm (1-1/2 inch) wide, 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.

## **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.

### 3.02 ERECTION

- .1 Do application and finishing of gypsum board to ASTM C840 except where specified otherwise.
- .2 Erect hangers and runner channels for suspended gypsum board ceilings to ASTM C840 except where specified otherwise.
- .3 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .4 Install work level to tolerance of 1:1200.
- .5 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, and grilles.
- .6 Install 19 x 64 mm furring channels parallel to, and at exact locations of, steel stud partition header track.
- .7 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .8 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.
- .9 Install wall furring for gypsum board wall finishes to ASTM C 840, except where specified otherwise.
- .10 Furr openings and around built-in equipment, cabinets, and access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .11 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .12 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 or 25 mm drywall screw as required.
- .13 Install 150 mm continuous strip of 12.7 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 or double layer gypsum board to metal furring or framing using screw fasteners. 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 gypsum board to concrete and concrete block surfaces, where indicated, using laminating adhesive. Apply double layer where indicated.
  - .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 mould resistant gypsum board adjacent to slop sinks and janitors' closets, in kitchen areas, concessions, serveries, and washrooms (except where tile backer boards are used at tile locations). Apply mould resistant sealant to edges, ends, cut outs which expose gypsum core and to fastener heads. Do not apply joint treatment on areas to receive tile finish.
- .5 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.
- .6 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.
- .7 Install gypsum board with face side out.
- .8 Do not install damaged or damp boards.
- .9 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 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
- .6 Construct control and expansion joints of preformed units or two back to back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .7 Provide continuous polyethylene dust barrier behind and across control joints.
- .8 Expansion and Control Joints:
  - .1 Locate control joints where indicated or as required, and at changes in substrate construction, at approximate 10 m spacing on long corridor runs, and at approximate 15 m spacing on ceilings.
  - .2 Install control joints straight and true.
  - .3 Construct expansion joints at building expansion and construction joints. Provide continuous dust barrier.
  - .4 Install expansion joint straight and true.
- .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 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 taping, 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.
- .13 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.
- .14 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.
- .15 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .16 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
- .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 Remove ridges by light sanding or wiping with damp cloth.
- .20 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.

- .2 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 Use Type 'X' and 'Type 'C' Fire Rated board options at fire rated wall and ceiling assemblies as indicated and as required; refer to Drawings for rated assembly locations and required ratings.
- .2 Install board as indicated, and as follows:
  - .1 Standard Board: general use unless otherwise specified.
  - .2 Shaft Wall Board: as indicated.
  - .3 Mould Resistant Board: inside face of exterior walls, adjacent to sinks and basins, and at plumbing walls.
  - .4 Cement Board: foundations.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 10 00 - Rough Carpentry.
- .2 Section 06 20 00 - Finish Carpentry.

### **1.02 REFERENCE STANDARDS**

- .1 ASTM International
  - .1 ASTM F1066-04(2014)e1 Standard Specification for Vinyl Composition Floor Tile.
  - .2 ASTM F1700-13a, Standard Specification for Solid Vinyl Floor Tile.
  - .3 ASTM F1861-08(2012)e1, Standard Specification for Resilient Wall Base.
- .2 Underwriters Laboratories of Canada (ULC):
  - .1 CAN/ULC S102.2-10, Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.
- .3 South Coast Air Quality Management District (SCAQMD)
  - .1 SCAQMD Rule 1168-A2011, Adhesive and Sealant Applications.

### **1.03 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 resilient tile flooring and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
  - .1 Submit duplicate tiles in size specified, and 300 mm long base sample.

### **1.04 MAINTENANCE MATERIAL SUBMITTALS**

- .1 Extra Materials:
  - .1 Provide maintenance materials of resilient tile flooring, base and adhesive in accordance with Section 01 78 00 - Closeout Submittals.

- .2 Provide 15 square feet of each colour, pattern and type flooring material required for this project for maintenance use.
- .3 Extra materials from same production run as installed materials.
- .4 Identify each container of floor tile and each container of adhesive.
- .5 Deliver to Departmental Representative, upon completion of the work of this section.
- .6 Store where directed by Departmental Representative.

#### **1.05 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 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect specified materials from damage.
  - .3 Replace defective or damaged materials with new.

#### **1.06 SITE CONDITIONS**

- .1 Ambient Conditions:
  - .1 Maintain air temperature and structural base temperature at flooring installation area above 20 degrees C for 48 hours before, during and for 48 hours after installation.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Vinyl composition tile: light commercial use; to ASTM F1700, Class III, Type B, 2 mm overall thickness, 914 x 101 mm planks (4 inches x 36 inches), in standard wood colour range, as selected by Departmental Representative. FloorScore® Certified.

- .2 Finish: Factory prefinished.
- .3 Resilient base: rubber, to ASTM F1861, coved, minimum 1200 mm length and 101 mm high x 3 mm thick, including pre-moulded end stops and external corners for coved base only, of colour selected by Departmental Representative.
- .4 Primers and adhesives: waterproof, recommended by flooring manufacturer for specific material on applicable substrate, above, at or below grade.
  - .1 Flooring adhesives:
    - .1 Adhesive: maximum VOC limit 60 g/L to SCAQMD Rule 1168.
    - .2 Cove base adhesives:
      - .1 Adhesive: maximum VOC limit 50 g/L to SCAQMD Rule 1168.
- .5 Flooring protection: 46 Mil (1.2 mm) thick, heavy duty, non-staining, spill-resistant (protects floor against water, paint, mud, etc.) temporary floor protection.
- .6 Wood floor primer as recommended or supplied by floor tile manufacturer.
- .7 Wood repair materials as required: to Section 06 10 00 - Rough Carpentry and Section 06 20 00 - Finish Carpentry; wood shall match existing adjacent in species, dimensions and finish.
- .8 Metal edge strips: aluminum extruded, smooth, mill finish with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.
- .9 Sealer and wax: types recommended by resilient flooring material manufacturer for material type and location.
  - .1 Sealer: maximum VOC limit 100 g/L to SCAQMD Rule 1113.

### **3 EXECUTION**

#### **3.01 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for resilient tile flooring 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. Commencement of work means acceptance of conditions.

### **3.02 INSPECTION**

- .1 Ensure concrete floors are dry, by using test methods recommended by tile manufacturer.

### **3.03 SUB-FLOOR TREATMENT**

- .1 Remove existing resilient flooring.
- .2 Remove or treat old adhesives to prevent residual, old flooring adhesives from bleeding through to new flooring and/or interfering with the bonding of new adhesives.
- .3 Clean floor and apply filler; trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.
- .4 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.
- .5 Prime wood sub-floors, and seal concrete slabs to flooring manufacturer's printed instructions.
  - .1 Preparations required when installing over wood, plywood or particle board:
    - .1 Repair loose or broken boards. Secure with 8-D cement-coated screw nails.
    - .2 If the majority of the boards are worn or badly cupped, cover with 5/8 inch (1.6 cm) exterior grade AD plywood secured with 8-D cement-coated screw nails spaced 6 inches (15.2 cm) apart. Sand seams smooth.
    - .3 Sand the finish down to bare wood.
    - .4 Remove dust by sweeping or vacuuming, then wiping with a tack cloth.
    - .5 Prime floors with manufacturer's recommended or supplied primer

### **3.04 TILE APPLICATION**

- .1 Provide high ventilation rate, with maximum outside air, during installation, and for 72 hours after installation. If possible, vent directly to outside. Do not let contaminated air recirculate through district or whole building air distribution system. Maintain extra ventilation for at least one month following building occupation.
- .2 Apply adhesive uniformly using recommended trowel in accordance with flooring manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place.
- .3 Lay flooring with joints parallel to building lines to produce symmetrical tile pattern. Border tiles minimum half tile width.
- .4 Install flooring with pattern grain parallel for units and parallel to length of room.
- .5 As installation progresses, and after installation, roll flooring in 2 directions with 45 kg minimum roller to ensure full adhesion.
- .6 Cut tile and fit neatly around fixed objects.
- .7 Install feature strips and floor markings where indicated. Fit joints tightly.
- .8 Install flooring in pan type floor access covers. Maintain floor pattern.
- .9 Continue flooring through areas to receive movable type partitions without interrupting floor pattern.
- .10 Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.
- .11 Install metal edge strips at unprotected or exposed edges where flooring terminates.

### **3.05 BASE APPLICATION**

- .1 Lay out base to keep number of joints at minimum. Base joints at maximum length available or at internal or pre-moulded corners.
- .2 Clean substrate and prime with one coat of adhesive.

- .3 Apply adhesive to back of base.
- .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
- .5 Install straight and level to variation of 1:1000.
- .6 Scribe and fit to door frames and other obstructions. Use pre-moulded end pieces at flush door frames.
- .7 Cope internal corners. Use pre-moulded corner units for right angle external corners. Use formed straight base material for external corners of other angles, minimum 300 mm each leg. Wrap around toeless base at external corners.

### **3.06 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.
  - .1 Clean flooring and base surfaces to flooring manufacturer's printed instructions.
- .3 Remove excess adhesive from floor, base and wall surfaces without damage.
- .4 Clean, seal and wax floor and base surface to flooring manufacturer's instructions. In carpeted areas clean, seal and wax base surface before carpet installation.
- .5 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.

### **3.07 PROTECTION**

- .1 Protect new floors from time of final set of adhesive until final inspection.
- .2 Prohibit traffic on floor for 48 hours after installation.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 20 00 - Finish Carpentry.

### **1.02 REFERENCE STANDARDS**

- .1 ASTM International
  - .1 ASTM D3936-12, Standard Test Method for Resistance to Delamination of the Secondary Backing of Pile Yarn Floor Covering.
  - .2 ASTM E2471-05(2011)e1, Standard Test Method for Using Seeded-Agar for the Screening Assessment of Antimicrobial Activity In Carpets.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB 4.2 NO. 27.6-2015, Textile Test Methods - Flame Resistance - Methenamine Tablet Test for Textile Floor Coverings.
  - .2 CAN/CGSB 4.2 NO. 77.1-94/ISO 4919: 1978 (R2012), Textile Test Methods - Carpets - Determination of Tuft Withdrawal Force.
- .3 Carpet and Rug Institute (CRI)
  - .1 CRI Carpet Installation Standard 2009.
  - .2 CRI Green Label Indoor Air Quality Testing Program.
  - .3 CRI Green Label Plus Indoor Air Quality Testing Program.
- .4 Health Canada
  - .1 C.R.C., c.923-10, Hazardous Products Act - Carpet Regulations, Part II of Schedule 1.
- .5 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .6 National Floor Covering Association (NFCA)
  - .1 National Floor Covering Specification Manual 2007.
- .7 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1113-A2007, Architectural Coatings.
  - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

- .8 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC S102-07, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
  - .2 CAN/ULC S102.2-07, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

- .1 Pre-Installation Meetings:
  - .1 Convene pre-installation meeting 1 week prior to beginning work of this Section and on-site installation, with Contractor's Representative and Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:
    - .1 Verify project requirements.
    - .2 Review installation and substrate conditions.
    - .3 Coordination with other construction subtrades.
    - .4 Review manufacturer's written installation instructions and warranty requirements.
- .2 Sequencing: sequence with other work in accordance with Section 01 32 16.07. Comply with manufacturer's written recommendations for sequencing construction operations.
  - .1 Tile carpeting work shall be performed after painting and sealant applications are finished in affected floor areas. Install tile carpeting after work that may stain or damage tiles. Protect from construction damage.
- .3 Scheduling: schedule with other work in accordance with Section 01 32 16.07.

### **1.04 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 each carpet tile adhesive, and carpet protection and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.

- .3 Shop Drawings:
  - .1 Submit drawings showing layout and orientation of tiles.
  - .2 Information on shop drawings to indicate:
    - .1 Nap: direction, open edges, special patterns.
    - .2 Cutouts: show locations where cut-outs are required.
    - .3 Edgings: show location of edge moldings and edge bindings.
- .4 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.
  - .3 Submit duplicate samples of each type of carpet tile specified and duplicate tiles for each colour selected, 150 mm length binder bars, base and divider strips.
- .5 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .6 Test and Evaluation Reports:
  - .1 Certified test reports showing compliance with specified performance characteristics and physical properties.
- .7 Manufacturer's Instructions: submit manufacturer's installation and storage instructions.
- .8 Manufacturers Reports:
  - .1 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance with specifications.
- .9 Qualification Statements:
  - .1 Compliance: to CAN/ULC S102 and CAN/ULC S102.2.
  - .2 Testing: passes testing requirements of:
    - .1 Green Label Plus Indoor Air Quality Testing Program.
  - .3 Tuft bind: meets requirements when tested to CAN/CGSB 4.2 No.77.1.

### 1.05 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for installed products for incorporation into manual.
- .3 Warranty Documentation: submit warranty documents specified.

### 1.06 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra stock materials: deliver to Departmental Representative 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.
  - .1 Quantity: provide full size units to a minimum 5% each of carpet tiles and base.
  - .2 Delivery, storage and protection: comply with Departmental Representative 's requirements for delivery and storage of extra materials. Protect from damage as required.

### 1.07 QUALITY ASSURANCE

- .1 Regulatory Requirements: to Section 01 41 00 - Regulatory Requirements.
  - .1 Prequalification: compliance with Health Canada regulations under "Hazardous Products Act", Part II of Schedule 1.
- .2 Qualifications:
  - .1 Manufacturer: capable of providing field service representation during construction and approving application method, and maintains ISO 9001 & 14001 Certified facilities.
  - .2 Flooring Installer:
    - .1 Experienced in performing work of this Section who has specialized in installation of work similar to that required for this project.
    - .2 Certified by carpet manufacturer prior to tender submission.
    - .3 Must not sub-contract labour without written approval of Departmental Representative.

- .4 Responsible for proper product installation, including floor testing and preparation as specified and in accordance with carpet manufacturer's written instructions.

#### **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. Inspect tiles and replace damaged or defective tiles with new tiles.
- .3 Storage and Handling Requirements:
  - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
  - .3 Store and protect carpet tile and adhesive in original containers or wrapping with manufacturer's seals and labels intact.
  - .4 Store and protect carpet tile and accessories in location as directed by Departmental Representative.
  - .5 Store carpet and adhesive at minimum temperature of 18 degrees C and relative humidity of maximum 65% for minimum of 48 hours before installation.
  - .6 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.
  - .7 Safety: comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.
  - .8 Replace defective or damaged materials with new.

#### **1.09 SITE CONDITIONS**

- .1 Ambient Conditions:
  - .1 Moisture: ensure substrate is within moisture limits and alkalinity limits recommended by manufacturer. Prepare moisture testing and provide report to Departmental Representative.

- .2 Temperature: maintain ambient temperature of not less than 18 degrees C from 72 hours before installation to at least 48 hours after completion of work.
- .3 Relative humidity: maintain between 10% and 65% for 48 hours before, during and 72 hours after installation.
- .4 Ventilation:
  - .1 Ventilate area of work by use of approved portable supply and exhaust fans.
  - .2 Ventilate enclosed spaces in accordance with Section 01 51 00 - Temporary Utilities.
  - .3 Provide continuous ventilation during and after carpet application. Run ventilation system 24 hours per day during installation; provide continuous ventilation for 7 days after completion of carpet installation.
- .5 Install carpet after space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete.

#### 1.10 WARRANTY

- .1 Manufacturer's warranty: submit, for Departmental Representative's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and does not limit other rights Owner may have under Contract Documents.
- .2 Warranty period: 2-year, commencing on date of substantial performance of work.
  - .1 Warranty covers labour and repair or replacement of defective components for 2 years after date of substantial performance.

## 2 PRODUCTS

### 2.01 MATERIAL COMPONENTS

- .1 Carpet tile construction shall meet or exceed the following criteria:
  - .1 Fibre Content: 100% 6,6 nylon, bulk continuous filament, and permanently conductive fibres to control electrostatic propensity.
  - .2 Dye Method: 100% Solution Dyed.
  - .3 Pile Characteristics: tufted textured loop.
  - .4 Tufted yarn weight: 509 g/m<sup>2</sup> minimum.
  - .5 Machine gauge: minimum 47.2 ends/10cm.
  - .6 Pile height: 3 mm.
  - .7 Pile thickness: 1.9 mm minimum.

- .8 Stiches: 30.2 ends/10 cm minimum.
- .9 Pile density: 267.7 g/m<sup>3</sup> minimum.
- .10 Dye lots: mergeable.
- .11 Tile size: 50 cm x 50 cm.
- .12 Backing System:
  - .1 Manufacturers standard polyvinylchloride (PVC) backing.
  - .2 Maintaining a 100% true moisture barrier between the secondary backing and the substrate below.
- .13 Color and Pattern: Departmental Representative to select from manufacturers standard colour range.
- .14 Inherent Static Control less than 3.0 Kilovolts at 21°C and 20% relative humidity.
- .15 Delimitation to ASTM D3936 to min 2.5 Lbs/in.
- .16 Soil/Stain protection.
- .17 Preservative protection.
- .18 Mould protection, no mould or bacterial growth when tested to ASTM E2471.
- .19 Indoor air quality: Green Label Plus.

## 2.02 ACCESSORIES

- .1 Base: new base material and finish to match existing.
- .2 Binder Bars: aluminum, clear anodic coating, designed for carpet being installed.
- .3 Edge Strips:
  - .1 Metal:
    - .1 Hammered surface aluminum, designed for carpet being installed.
    - .2 Floor flange minimum 38 mm wide, face minimum 16 mm wide.
    - .3 Finish: clear anodic coating.
- .4 Adhesive:
  - .1 Multi-purpose Adhesive Self-Release Type: recommended or supplied by carpet tile manufacturer for direct glue down installation.
- .5 Transition Mouldings:
  - .1 Carpet edge / reducer strip: carpet tile manufacturer's recommended or supplied aluminum mouldings, clear anodic finish, designed for carpet being installed.
- .6 Carpet protection: 46 Mil (1.2 mm) thick, heavy duty, non-staining, spill-resistant (protects floor against water, paint, mud, etc.) temporary floor protection.

- .7 Wood floor primer as recommended or supplied by carpet tile manufacturer.
- .8 Wood repair materials as required: to Section 06 10 00 - Rough Carpentry and Section 06 20 00 - Finish Carpentry; wood shall match existing adjacent in species, dimensions and finish.

### **3 EXECUTION**

#### **3.01 INSTALLERS**

- .1 Use only experienced and qualified technicians to carry out assembly and installation of tile carpet.

#### **3.02 EXAMINATION**

- .1 Examine conditions, substrates and work to receive work of this Section, coordinate with Section 01 71 00 - Examination and Preparation.
- .2 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for carpet tile installation in accordance with manufacturer's written instructions.
  - .1 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .2 Proceed with installation only after unacceptable conditions have been remedied. Proceeding with work means acceptance of conditions.

#### **3.03 PREPARATION**

- .1 Sub-Floor and Surface Preparation: prepare surface in accordance with manufacturer's written recommendations and coordinate with Section 01 71 00 - Examination and Preparation.
  - .1 Prepare floor surfaces in accordance with CRI Carpet Installation Standard.
  - .2 Preparations required when installing over wood, plywood or particle board:
    - .1 Repair loose or broken boards. Secure with 8-D cement-coated screw nails.
    - .2 If the majority of the boards are worn or badly cupped, cover with 5/8 inch (1.6 cm) exterior grade AD plywood secured with 8-D cement-coated screw nails spaced 6 inches (15.2 cm) apart. Sand seams smooth.

- .3 Sand the finish down to bare wood.
  - .4 Remove dust by sweeping or vacuuming, then wiping with a tack cloth.
  - .5 Prime floors with manufacturer's recommended or supplied primer.
- .2 Tile Carpeting Preparation:
- .1 Pre-condition carpeting: remove carpet tiles from carton and allow to adjust to jobsite ambient conditions minimum 48 hours prior to installation.
  - .2 The labels on each carton indicate product style, pattern, color, run number and dye lot. Ensure that the style, pattern and colour match the specifications for each area of installation.
  - .3 Do not mix run numbers or dye lots in the same room.

### **3.04 INSTALLATION**

- .1 Install carpet tiles in accordance with manufacturer's written instructions, and CRI Carpet Installation Standard and coordinate with Section 01 73 00 - Execution.
- .2 Coordinate tile carpeting work with work of other trades, for proper time and sequence to avoid construction delays.
- .3 Install carpet tile after finishing work is completed but before demountable office partitions and telephone and electrical pedestal outlets are installed.
- .4 Install carpet tile as per manufacturer's recommendation. This can include quarter-turn 90 degree format, monolithic, random, quarter turn ashlar, horizontal, herringbone or vertical ashlar.
- .5 Snugly join carpet tiles in completed installation.
  - .1 Measure distance covered by 11 carpet tiles (10 joints) and ensure distance is in compliance with manufacturer specifications.
  - .2 Do not trap yarn between carpet tiles.
- .6 Apply thin film of pressure-sensitive adhesive over prepared and primed substrate according to manufacturer's recommendations.
- .7 Ensure finished installation presents smooth wearing surface free from conspicuous seams, burring and other faults.

- .8 Use material from same dye lot.
  - .1 Ensure colour, pattern and texture match within visual areas.
  - .2 Maintain constant pile direction.
- .9 Fit around architectural, mechanical, electrical and telephone outlets, and furniture fitments, around perimeter of rooms into recesses, and around projections.
- .10 Install carpet tiles to underfloor duct system and to access covers.
- .11 Install carpeting in pan type floor access covers.
- .12 Extend carpet tiles into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- .13 Install carpet tiles smooth and free from bubbles, puckers, and other defects.
- .14 Protect exposed carpet tile edges at transition to other flooring materials with suitable transition strips.
- .15 Base Installation: to Section 06 20 00 - Finish Carpentry.

### **3.05 SITE QUALITY CONTROL**

- .1 Manufacturer's Field Services:
  - .1 Coordinate manufacturer's services with Section 01 45 00 - Quality Control. Have manufacturer review work involved in handling, installation / application, protection and cleaning of its products, and submit written reports, in acceptable format, to verify compliance of work with Contract.
  - .2 Manufacturer's field services: provide manufacturer's field services, consisting of product use recommendations and periodic site visits for inspection of product installation, in accordance with manufacturer's instructions.
  - .3 Schedule site visits:
    - .1 After delivery and storage of products, and when preparatory Work, or other Work, on which the Work of this Section depends, is complete but before installation begins.
    - .2 Upon completion of Work, after cleaning is carried out.
  - .4 Obtain reports within 3 days of review and submit immediately to Departmental Representative.

### **3.06 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.
    - .1 Vacuum carpets clean immediately after completion of installation.
- .2 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.

### **3.07 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Prohibit traffic on carpet for period of 72 hours minimum after installation and until adhesive is cured.
- .3 Install carpet protection as required.
- .4 Repair damage to adjacent materials caused by tile carpeting installation.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 05 50 00 - Metal Fabrications.
- .2 Section 05 51 29 - Metal Stairs and Ladders.
- .3 Section 06 10 00 - Rough Carpentry.
- .4 Section 06 20 00 - Finish Carpentry.
- .5 Section 08 11 00 - Metal Doors and Frames.
- .6 Section 08 03 11 - Period Wood Doors.
- .7 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
  - .1 Green Seal Standards GS-11, Paint.
  - .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 EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 - 1995, (for Surface Coatings).
  
- .5 Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - 2014.
  
- .6 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1113-04, Architectural Coatings.
  
- .7 Society for Protective Coatings (SSPC)
  - .1 SSPC Painting Manual, 2011 Edition.

### **1.03 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 paint and coating products and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit 2 copies of WHMIS MSDS.
  
- .3 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.

- .3 Submit duplicate 200 x 300 mm sample panels of each paint, stain, clear coating, and special finish with specified paint or coating in colours, gloss/sheen and textures required to MPI Painting Specification Manual standards.
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

#### **1.04 QUALITY ASSURANCE**

- .1 Painting Trade Contractor: minimum of five years proven satisfactory experience. 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.

#### **1.05 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.

#### 1.06 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 Use only MPI listed L-rated materials.
  - .2 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 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.
- .5 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.
- .6 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.
- .7 Exterior painting (all systems shall be 3-coat, with primer, first topcoat and second topcoat):
  - .1 Structural Steel and Metal Fabrications:
    - .1 EXT 5.1D - Alkyd - G6 finish.
  - .2 Galvanized Metal:
    - .1 EXT 5.3B - Alkyd - G6 finish.
  - .3 Dressed Lumber:
    - .1 EXT 6.3B Alkyd G6 finish (over alkyd/oil primer).
  - .4 Wood Paneling:
    - .1 EXT 6.4B Alkyd G5 finish (over alkyd/oil primer).
  - .5 Wood Decks and Stairs / Steps:
    - .1 EXT 6.5B Alkyd floor enamel G2 finish with SRA.
  - .6 Concrete Faced Foundation Panels:
    - .1 EXT 9.1C Elastomeric coating.
- .8 Interior painting (all systems shall be 3-coat, with primer, first topcoat and second topcoat):
  - .1 Exposed concrete horizontal surfaces:
    - .1 INT 3.2D - Pigmented polyurethane finish.
  - .2 Structural Steel and Metal Fabrications:
    - .1 INT 5.1E Alkyd - G5 finish.

- .3 Galvanized Metal:
  - .1 INT 5.3C - Alkyd - G6 finish (over cementitious primer).
- .4 Plaster and gypsum board:
  - .1 INT 9.2A - Latex - G3 finish (over latex sealer).
- .5 Dimension Lumber:
  - .1 INT 6.2H Polyurethane varnish G5 finish.
- .6 Dressed Lumber:
  - .1 Doors: INT 6.3B- Alkyd - G6 finish.
  - .2 Clear finish: INT 6.3K - Polyurethane varnish - G6 finish.
- .7 Wood Floors and Stairs:
  - .1 INT 6.5M Polyurethane, clear, 2-component 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 conduits, piping, hangers, ductwork and other mechanical and electrical equipment exposed in finished areas, to match adjacent surfaces, except as indicated.
  - .2 Do not paint over nameplates.
  - .3 Keep sprinkler heads free of paint.
  - .4 Paint fire protection piping red.
  - .5 Paint disconnect switches for fire alarm system and exit light systems in red enamel.

- .6 Paint natural gas piping yellow.
- .7 Paint both sides and edges of backboards for telephone and electrical equipment before installation.
  - .1 Leave Mechanical/Electrical equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

### **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.

**END OF SECTION**