

**Part 1            General**

**1.1            SECTION INCLUDES**

- .1    Interior panels for walls and ceilings.
- .2    Panel and joint treatment.
- .3    Non-loadbearing metal stud wall framing.
- .4    Metal channel ceiling framing.
- .5    Installation of access doors provided by others.
- .6    Acoustic sound insulation.

**1.2            RELATED SECTIONS**

- .1    Section 07 84 00 - Firestopping:
- .2    Section 07 92 00 - Joint Sealants.
- .3    Section 08 11 00 – Hollow Metal Frames
- .4    Section 08 31 13 - Access Doors and Frames
- .5    Section 09 91 00 - Painting
- .6    Mechanical and Electrical Divisions: Supply of access panels.

**1.3            REFERENCES**

- .1    ASTM C475/C475M-02 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- .2    ASTM C645-04 - Specifications for Non-Structural Steel Framing Members.
- .3    ASTM C754-00 - Installation of Steel Framing Members to Receive Screw-Attached Gypsum Board.
- .4    ASTM C840-04a - Standard Specification for Application and Finishing of Gypsum Board.
- .5    ASTM C1002-01 - Steel Self-Piercing, Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .6    ASTM C1280-04 - Standard Specification for Application of Gypsum Sheathing.
- .7    ASTM C1396/C1396M-04 - Standard Specification for Gypsum Board.
- .8    ASTM E119-00a - Method for Fire Tests of Building Construction and Materials.
- .9    ASTM E90-04 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- .10   GA-201 (Gypsum Association) - Gypsum Board for Walls and Ceilings.

- .11 GA-214 (Gypsum Association) - Recommended Specification: Levels of Gypsum Board Finish.
- .12 GA-216 (Gypsum Association) - Application and Finishing of Gypsum Board.
- .13 GA-801 (Gypsum Association) - Handling Gypsum Board.

#### **1.4 SUBMITTALS FOR REVIEW**

- .1 Submit in accordance with Section 01 33 00.
- .2 Product Data: Provide data on metal framing, gypsum board, joint tape and joint compound.

#### **1.5 QUALITY ASSURANCE**

- .1 Perform Work in accordance with ASTM C840.
- .2 Handling Gypsum Board: Comply with GA-801.

### **Part 2 Products**

#### **1.6 FRAMING MATERIALS**

- .1 Studs and Tracks: ASTM C645; galvanized sheet steel, 0.76 mm (22 gauge) thick unless indicated otherwise.
- .2 Furring, Framing, and Accessories: ASTM C645 and GA-216.
- .3 Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- .4 Blocking: Galvanized sheet metal; minimum 18 gauge, 200 mm wide minimum.

#### **1.7 PANEL MATERIALS**

- .1 Gypsum Board: ASTM C1396/C1396M, STANDARD AND Type X, thickness as indicated, maximum available length in place; ends square cut, tapered edges.

#### **1.8 ACCESSORIES**

- .1 Access Panels: Supplied by others, installed by this Section.
- .2 Sound Attenuation Insulation:
  - .1 Glass Fibre Batt: to CAN/ULC-S702; Type: 1; un-surfaced; thickness: as indicated.
- .3 Acoustic Sealant: to Section 07 92 00.
- .4 Trim: GA-216, Metal: Corner bead, Casing bead, L-bead, LK-bead, LC-bead and Control joints, and others as required.
- .5 Joint Materials: ASTM C475; paper reinforcing tape, joint compound, adhesive, and water.
- .6 Panel Fasteners: ASTM C1002, Type S12 screws.

- .7 Compressible Foam Gasket: sill plate gasket; polyethylene foam, minimum thickness 6 mm x full width of sill plate at all acoustic sound walls.

### **Part 3 Execution**

#### **1.9 METAL STUD INSTALLATION**

- .1 Install studs in accordance with ASTM C754 and manufacturer's instructions.
- .2 Install sill plate gaskets below all tracks.
- .3 Metal Stud Spacing: as indicated.
- .4 Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above.
  - .1 Maintain clearance under structural building members to avoid deflection transfer to studs.
  - .2 Provide extended leg ceiling runners.
- .5 The drywall contractor is required to coordinate his stud installation with all other trades, providing openings, bracing, bulkheads etc as required to ensure that partitions are stable and run full height to underside of deck above as noted.
  - .1 No extras will be provided for off-sets, etc.. not shown on drawings.
- .6 Drywall edges shall follow flutes of deck above and joints sealed with fire caulk or acoustical sealant in non rated acoustic sound walls.
- .7 Door and Window Opening Framing: Install double studs at frame jambs.
  - .1 Install stud tracks on each side of opening, at frame head height, and between studs and adjacent studs.
- .8 Blocking: Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, frame opening, toilet accessories, hardware, equipment, wall mounted door stops, firestopping and as required.
  - .1 Both ends of metal blocking and intermittent lap joints to be secured to studs back-up
- .9 Anchorage to Substrate:
  - .1 Rigidly secure studs to substrate at minimum mid-height to prevent deflection.
  - .2 Provide bracing above ceilings as required to prevent deflection.

#### **1.10 WALL FURRING INSTALLATION**

- .1 Erect furring for direct attachment to substrate.
- .2 Shim wall as required and rigidly secure to substrate to prevent deflection.
- .3 Erect furring channels; space maximum 400 mm on centre, not more than 100 mm from floor and ceiling lines and abutting walls.

- .4 Secure in place on alternate channel flanges at maximum 600 mm on centre.
- .5 Provide metal angle at sides, bottom and top of walls for edge securment.

#### **1.11 CEILING FRAMING INSTALLATION**

- .1 Install in accordance with ASTM C754 and manufacturer's instructions.
- .2 Coordinate location of hangers with other work.
- .3 Install ceiling framing independent of walls, columns, and above ceiling work.
- .4 Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing.
  - .1 Extend bracing minimum 600 mm past each end of openings.
- .5 Laterally brace entire suspension system.

#### **1.12 ACCESSORIES INSTALLATION**

- .1 Install access panels to locations required for access.
- .2 Install resilient channels at maximum 600 mm on centre.
  - .1 Locate joints over framing members.
  - .2 Provide metal angle at bottom and top of wall for edge securment.
- .3 Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
  - .1 Secure with insulation clips or other means to prevent sagging.
  - .2 Stagger Joints.
- .4 Install acoustic sealant at gypsum board perimeter at:
  - .1 Metal Framing: Two beads.
  - .2 Base Layer.
  - .3 Face Layer.
  - .4 Caulk all penetrations of partitions by conduit, pipe, duct work, rough-in boxes.
- .5 Supply and install security mesh as detailed on drawings full height of wall to underside of slab above.

#### **1.13 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, 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 C840, except where specified otherwise.
- .11 Furr openings and around built-in equipment, cabinets, 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 and 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.
- .14 Install acoustic sound insulation.

#### **1.14 APPLICATION**

- .1 Apply gypsum board after bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been approved.
- .2 Apply single and double layer gypsum board to wood metal furring or framing using screw fasteners stud adhesive for first layer, laminating adhesive screw fasteners 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 to ASTM C840.
    - .2 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.

- .2 Double-Layer Application:
  - .1 Install gypsum board for base layer and exposed gypsum board for face layer.
  - .2 Apply base layer to ceilings prior to base layer application on walls; apply face layers in same sequence. Offset joints between layers at least 250 mm.
  - .3 Apply base layers at right angles to supports unless otherwise indicated.
  - .4 Apply base layer on walls and face layers vertically with joints of base layer over supports and face layer joints offset at least 250 mm with base layer joints.
- .3 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components.
  - .1 Seal full perimeter of cut-outs around electrical boxes, ducts, , in partitions where perimeter sealed with acoustic sealant.
- .4 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
- .5 Install gypsum board on walls vertically to avoid end-butt joints.
  - .1 At stairwells and similar high walls, install boards horizontally with end joints staggered over studs, except where local codes or fire-rated assemblies require vertical application.
- .6 Install gypsum board with face side out.
- .7 Do not install damaged or damp boards.
- .8 Locate edge or end joints over supports.
- .9 Stagger vertical joints over different studs on opposite sides of wall.

## **1.15 INSTALLATION**

- .1 Erect accessories straight, plumb or level, rigid and at proper plane.
  - .1 Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured.
  - .2 Mitre and fit corners accurately, free from rough edges.
- .2 Install casing beads around perimeter of suspended ceilings.
- .3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated.
  - .1 Seal joints with sealant.
- .4 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.

- .5 Construct control joints of preformed units two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .6 Provide continuous polyethylene dust barrier behind and across control joints.
- .7 Locate control joints where indicated at changes in substrate construction at approximate 10 m spacing on long runs at approximate 15 m spacing on ceilings.
- .8 Install control joints straight and true.
- .9 Construct expansion joints at building expansion and construction joints. Provide continuous dust barrier.
- .10 Install expansion joint straight and true.
- .11 Install access doors to electrical and mechanical fixtures specified in respective sections.
  - .1 Rigidly secure frames to furring or framing systems.
- .12 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.
- .13 Gypsum Board Finish: finish gypsum board walls and ceilings to level 5 finish in accordance with AWCI Levels of Gypsum Board Finish:
  - .1 Level 5: 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; apply a thin skim coat of joint compound to entire surface; surfaces smooth and free of tool marks and ridges.
- .14 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.
- .15 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.
- .16 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .17 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
- .18 Mix joint compound slightly thinner than for joint taping.
- .19 Apply thin coat to entire surface using trowel or drywall broad knife to fill surface texture differences, variations or tool marks.
- .20 Allow skim coat to dry completely.
- .21 Remove ridges by light sanding or wiping with damp cloth.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1        ANSI A108.5 - Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex Portland Cement Mortar.
- .2        ANSI A108.10 - Installation of Grout in Tile work.
- .3        ANSI A118.4 - Latex-Portland Cement Mortar.
- .4        ANSI A118.6 - Ceramic Tile Grouts.
- .5        ANSI A137.1 - Standard Specifications for Ceramic Tile.
- .6        TTMAC (Terrazzo, Tile, and Marble Association of Canada) - Manual.

**1.2                QUALITY ASSURANCE**

- .1        Perform Work in accordance with ANSI A137.1.
- .2        Conform to TTMAC Manual.
- .3        Maintain one copy of each document on site.

**1.3                SUBMITTALS**

- .1        Section 01 33 00: Submission procedures.
- .2        Product Data: Tile info, instructions for using adhesives and grouts.
- .3        Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

**Part 2            Products**

**2.1                TILE MATERIALS**

- .1        Wall Tile - Ceramic tile, 75 mm x 152 mm
  - .1            Specified Product:
    - .1                "Subway" by Centura color "Brite Biscuit"
    - .2                or approved equivalent in similar color

**2.2                MORTAR MATERIALS**

- .1        Mortar Materials: ANSI A118.4, premixed polymer modified Portland cement mortar;
- .2        Acceptable Products:

- .1 Flextile 52,
- .2 Kiesel Servofix KM,
- .3 Mapei Ultraflex 2,
- .4 TEC SturdiFlex.

### **2.3 GROUT MATERIALS**

- .1 Stain Resistant Grout:
  - .1 Acceptable Product:
    - .1 Laticrete
    - .2 Mapei Karacolour
    - .3 Polyblend
  - .2 Colour selection by Departmental Representative

### **2.4 ACCESSORIES**

- .1 Tile Edging: extruded anodized aluminum, similar to Schlüter JOLLY;

## **Part 3 Execution**

### **3.1 WORKMANSHIP**

- .1 Do tile work in accordance with TTMAC Tile Installation Manual, except where specified otherwise.

### **3.2 TILE INSTALLATION - GENERAL**

- .1 Install tile and grout to TTMAC Manual.
- .2 Grout tile joints using un-sanded grout type indicated.
- .3 Install transition trim in continuous lengths, solidly embedded in setting material.
  - .1 File exterior corners of metal trim round, smooth.

### **3.3 CLEANING**

- .1 Clean tile and grout surfaces.

**END OF SECTION**

**Part 1            General**

**1.1            SECTION INCLUDES**

- .1    Suspended metal grid ceiling system and perimeter trim.
- .2    Acoustic panels.
- .3    Caulking of perimeter trim to wall.

**1.2            REFERENCES**

- .1    ASTM C635 - Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
- .2    ASTM C636 - Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
- .3    ASTM E1264 - Classification of Acoustical Ceiling Products.
- .4    CISCA (Ceilings and Interior Systems Contractors Association) - Acoustical Ceilings: Use and Practice.

**1.3            SUBMITTALS FOR REVIEW**

- .1    Submit in accordance with Section 01 33 00.
- .2    Product Data: Provide data on metal grid system components, and acoustic units.
- .3    Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

**1.4            QUALITY ASSURANCE**

- .1    Conform to CISCA requirements.

**1.5            ENVIRONMENTAL REQUIREMENTS**

- .1    Maintain uniform temperature of minimum 16 degrees C and a humidity of between 20 and 40 percent prior to, during, and after acoustic unit installation.

**1.6            PROJECT CONDITIONS**

- .1    Sequence work to ensure acoustic ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- .2    Install acoustic units after interior wet work is dry.

**1.7            EXTRA MATERIALS**

- .1    Provide twelve (12) extra panels of each specified type; store where directed.

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**Part 2 Products**

**2.1 SYSTEM MATERIALS**

- .1 Acoustical Tiles: to ASTM E1264, for suspended ceiling system, 500 mm x 1500mm (20" x 60") size, square edge, cut to suit reflected ceiling plan layout and existing tile size:
  - .1 Minimum Noise Reduction Coefficient (NRC) of 0.55.
  - .2 Minimum Ceiling Attenuation Class (CAC) rating 35.
  - .3 Minimum Light reflectance range of 0.85
  - .4 Colour: white.
  - .5 Acceptable Products: Armstrong Fine Fissured 1736, CGC Radar 2617, or approved alternate
- .2 Suspension system: Non-fire rated, intermediate duty system to ASTM C 635, commercial quality galvanized rolled steel, standard white colour;
  - .1 Acceptable Products: Armstrong Prelude XL, CGC Donn DX, Chicago Metallic.
- .3 Accessories: Stabilizer bars, clips, splices, perimeter mouldings, hold down clips, required for suspended grid system.
- .4 Support Channels, Furring and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Verify that layout of hangers will not interfere with other work.

**3.2 INSTALLATION - LAY-IN GRID SUSPENSION SYSTEM**

- .1 Install suspension system in accordance with ASTM C636 and manufacturer's written instructions and as supplemented in this section.
- .2 Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- .3 Locate system according to reflected plan.
- .4 Install after major above ceiling work is complete.
  - .1 Coordinate the location of hangers with other work.
- .5 Hang suspension system independent of walls, columns, ducts, pipes and conduit.
  - .1 Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

- .6 Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- .7 Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- .8 Support fixture loads by supplementary hangers located within 150 mm of each corner; or support components independently.
- .9 Do not eccentrically load system, or produce rotation of runners.
- .10 Perimeter Moulding:
  - .1 Install edge moulding at intersection of ceiling and vertical surfaces
  - .2 Use longest practical lengths.
  - .3 Overlap and rivet corners.
  - .4 Provide at junctions with interruptions.
  - .5 Install small bead of white paintable acrylic sealant along all bottom edges to wall.
- .11 Form expansion joints to accommodate plus or minus 25 mm movement.
  - .1 Maintain visual closure.

### **3.3 INSTALLATION - ACOUSTIC UNITS**

- .1 Install acoustic units in accordance with manufacturer's instructions.
- .2 Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
- .3 Install units after above ceiling work is complete.
- .4 Install acoustic units level, in uniform plane, and free from twist, warp, and dents.
- .5 Cutting Acoustic Units:
  - .1 Cut to fit irregular grid and perimeter edge trim.
  - .2 Cut square reveal edges to field cut units.

### **3.4 TOLERANCES**

- .1 Maximum variation from flat and level surface: 3 mm in 3 m.
- .2 Maximum variation from plumb of grid members caused by Eccentric Loads: 2 degrees.

**END OF SECTION**

**Part 1            General**

**1.1            SECTION INCLUDED**

- .1        Resilient Vinyl Tile or Plank
- .2        Rubber base.
- .3        Floor prep and leveling.

**1.3            REFERENCES**

- .1        American Society for Testing and Materials International (ASTM)
  - .1        ASTM F1700 Class III Type B, Standard Specification for LVT Tile & Plank
- .2        Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1        Material Safety Data Sheets (MSDS).

**1.4            SUBMITTALS**

- .1        Provide submittals in accordance with Section 01 33 00 - Submittal Procedure.
- .2        Provide product data in accordance with Section 01 33 00 - Submittal Procedures
- .3        Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .1        Submit duplicate one plank or tile sample piece of material.
  - .2        Submit full range of base sample material for selection.
- .4        Closeout Submittals:
  - .1        Provide maintenance data for LVT flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

**1.5            DELIVERY, STORAGE AND HANDLING**

- .1        Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.

**1.6            AMBIENT CONDITIONS**

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

**1.7 MAINTENANCE****.1 Extra Materials:**

- .1 Provide extra materials of LVT tile + plank flooring, vinyl base and adhesives in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide one box or carton of flooring of each colour, pattern and type from same production run as installed materials.
- .3 Identify each carton or box of flooring and each container of adhesive.
- .4 Deliver to and store where directed by Departmental Representative upon completion of the work of this section.

**Part 2 Products****2.1 MATERIALS**

- .1 Luxury vinyl plank + tile flooring: composed of non-phthalate plasticizers
  - .1 Pattern: 6 inch wood grain plank + 18 inch striated pattern tile
  - .2 Thickness: 3.mm. with 20 mil wear layer
  - .3 Colours: VP 3522-U Creme + VA 5124-U Raffia
  - .4 Approved product: Centiva or alternate Amtico, Mannington
- .2 Resilient base: continuous, top set, complete with pre-moulded end stops and external corners:
  - .1 Type: rubber.
  - .2 Style: straight and cove.
  - .3 Thickness: 3.17 mm.
  - .4 Height: 101.6 mm.
  - .5 Lengths: cut lengths minimum 2400 mm.
  - .6 Colour: As selected by Departmental Representative.
  - .7 Approved product: Johnsonite or approved alternate.
- .3 Primers and adhesives: of types recommended by resilient flooring manufacturer for specific material on applicable substrate, above, on or below grade.
- .4 Sub floor patching/ filler leveling compound: Portland cement base filler, mix with latex and water to form a cementations paste.
- .5 Metal edge strips:
  - .1 Aluminum extruded, smooth, mill finish with stainless steel lip to extend under floor finish, shoulder flush with top of adjacent floor finish.

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**Part 3            Execution**

**3.1            MANUFACTURER'S INSTRUCTIONS**

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

**3.2            SITE VERIFICATION OF CONDITIONS**

- .1        Ensure concrete floors are clean and dry by using test methods recommended by flooring manufacturer.

**3.3            PREPARATION**

- .1        Remove existing 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 Seal concrete slab to flooring manufacturer's printed instructions.

**3.4            APPLICATION: FLOORING**

- .1        Provide high ventilation rate, with maximum outside air, during installation, and for 48 to 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. Do not spread more adhesive than can be covered by flooring before initial set takes place.
- .3        Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.
- .4        As installation progresses, and after installation roll flooring with 45 kg minimum roller to ensure full adhesion.
- .5        Cut flooring around fixed objects.
- .6        Install feature strips and floor markings where indicated.
- .7        Install flooring in pan type floor access covers. Maintain floor pattern.
- .8        Continue flooring over areas which will be under built-in furniture.

- .10 Continue flooring through areas to receive movable type partitions without interrupting floor pattern.
- .11 Terminate flooring at centre line of door in openings where adjacent floor finish or colour is dissimilar.
- .12 Install metal edge strips at unprotected or exposed edges where flooring terminates.

### **3.5 APPLICATION: BASE**

- .1 Lay out base to keep number of joints at minimum.
- .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.

### **3.6 FIELD QUALITY CONTROL**

- .1 Manufacturer's Field Services:
  - .1 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.

### **3.7 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Remove excess adhesive from floor, base and wall surfaces without damage.

### **3.8 PROTECTION**

- .1 Protect new floors until final inspection.
- .2 Prohibit traffic on floor for 48 hours after installation.

**END OF SECTION**

**Part 1            General**

**1.1            RELATED SECTIONS**

- .1      Section 08 11 00 - Metal Doors and Frames.
- .2      Section 09 21 16 - Gypsum Board Assemblies.

**1.2            REFERENCES**

- .1      Master Painters Institute (MPI)
  - .1          MPI Architectural Painting Specifications Manual, Latest Edition
- .2      American Society for Testing and Materials (ASTM)
  - .1          ASTM D2369-04, Standard Test Method for Volatile Content of Coatings.

**1.3            QUALITY ASSURANCE**

- .1      The Work must be performed by skilled workers under the regulations in the local jurisdiction.
- .2      Apprentices may be employed provided they work under the direct supervision of a skilled worker, in accordance with the regulations governing this trade.
- .3      Comply with the latest requirements of the MPI including those for surface preparation and application of primary or print painting.
- .4      Products used must be on the list of approved products given in the MPI Painting Specification Manual and all the products forming the coating system selected must be from the same manufacturer.

**1.4            SUBMITTALS**

- .1      Submittals in accordance with Section 01 33 00.
- .2      Submit product data and instructions for each paint and coating product to be used.
- .3      Samples: Submit full range colour sample chips to indicate where colour availability is restricted.
  - .1          Once colours are selected, provide colour samples of each colour selected on 8 ½ " x 11" paint card for approval.

**1.5            DELIVERY, STORAGE AND HANDLING**

- .1      Packing, Shipping, Handling and Unloading: in accordance with manufacturer's written instructions.
- .2      Remove damaged, opened and rejected materials from site.

- .3 Storage and Protection:
  - .1 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well ventilated area with temperature range 7°C to 30°C.

## **1.6 SITE CONDITIONS**

- .1 Heating, Ventilation and Lighting:
  - .1 Provide heating facilities to maintain ambient air and substrate temperatures above 10°C for 24 hours before, during and after paint application until paint has cured sufficiently.
  - .2 Provide continuous ventilation for seven days after completion of application of paint.
  - .3 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
  - .4 Provide the required lighting equipment to maintain a lighting level of 323 lux on the surfaces to be painted.
- .2 Surface and Environmental Conditions:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
  - .3 Apply paint when previous coat of paint is dry or adequately cured.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Paint materials shall be listed on the current edition of the MPI Approved Products List.
  - .1 Where selection of finishes from MPI Approved Products List is limited, selection of alternate materials will be at the option of the Departmental Representative.
- .2 Under no circumstance shall paint materials be applied without prior review of VOC limits by the Departmental Representative.
- .3 Provide interior paint products with a VOC range of 0g/L to 151 g/L.

- .4 Provide paint materials for paint systems from single manufacturer.
- .5 Conform to latest MPI requirements for interior painting work including preparation and priming.

## **2.2 COLOURS**

- .1 Interior Designer will provide Colour Schedule after Contract award.
- .2 Selection of colours from manufacturer's full range of colours.
- .3 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

## **2.3 MIXING AND TINTING**

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

## **2.4 GLOSS/SHEEN RATINGS**

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

<b>Gloss Level</b>	<b>Gloss @ 60 degrees</b>	<b>Sheen @85 degrees</b>
G1- matte (flat)	Max 5	Max 10
G 2 – velvet-like	Max 10	10 to 35
G 3 – eggshell	10 to 25	10 to 35
G 4 – satin-like	20 to 35	min 35
G 5 - semi-gloss - traditional	35 to 70	
G 6 – gloss- traditional	70 to 85	
G 7 – high gloss	More than 85	

- .2 Gloss levels (in general) unless noted otherwise:
  - .1 Ceiling : G1
  - .2 Walls : G3
  - .3 Metals : G5

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

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

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**3.2 GENERAL**

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

**3.3 PREPARATION**

- .1 Protection:
  - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking.
    - .1 If damaged, clean and restore surfaces as directed by Departmental Representative.
  - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
  - .3 Protect factory finished products and equipment.
  - .4 Protect passing pedestrians, building occupants and general public in and about the building.
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements.
- .4 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.

**3.4 APPLICATION**

- .1 Conform to manufacturer's application instructions unless specified otherwise.
- .2 Apply coats of paint continuous film of uniform thickness.
  - .1 Repaint thin spots or bare areas before next coat of paint is applied.
- .3 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

- .4 Sand and dust between coats to remove visible defects.
- .5 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.
- .6 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

### **3.5 INTERIOR PAINT AND COATING SYSTEMS**

- .1 Interior painting systems to be based on MPI Premium grade unless noted otherwise.
- .2 The following is list of principal items only.
  - .1 Surfaces not included in this schedule shall be painted at the discretion of the Departmental Representative.
- .3 Metal Fabrications - Shop finishing: vanity support brackets, etc.
  - .1 INT 5.1E - Alkyd Finish:
    - .1 One coat alkyd metal primer (omit when shop primed),
    - .2 Two finish coats alkyd.
- .4 Galvanized Metal: miscellaneous overhead steel pipes, decking, ducts, conduit, etc.
  - .1 INT 5.3H - Waterborne Dry Wall Finish:
    - .1 Two coats Waterborne Dry Wall MPI #133.
- .5 Galvanized Metal: interior steel man doors and frames.
  - .1 Shop primed or site primed,
  - .2 Two finish coats Pitt-Glaze WB Water Borne Acrylic Epoxy
- .6 Dressed Lumber: Interior Finish Carpentry and Millwork for Clear Finish:
  - .1 Shop Finish - INT 6.3K - Polyurethane Varnish Finish:
  - .2 Minimum three coats polyurethane finish, clear satin # 4.
- .7 Plywood Mounting Boards: electrical room.
  - .1 INT 6.4P - Pigmented Fire Retardant finish:
    - .1 Apply to ULC approved procedures.
    - .2 Use MPI#64 Fire Retardant Coating, Latex, Interior, Flat (ULC Approved); VOC range 51 g/L.
- .8 Gypsum Board - Dry Areas: Drywall surfaces, cement board, other wall and ceiling panels incl. wall-mounted equipment to be painted-out.
  - .1 INT 9.2B - HIPAC Latex:
    - .1 One coat Latex Primer Sealer,
    - .2 Two coats HIPAC Latex.
- .9 Canvas and Cotton Coverings.
  - .1 INT 10.1A - Latex:
    - .1 One coat Latex Primer Sealer,
    - .2 Two coats Latex or alternatively;
    - .3 Paint-out during INT 5.1C - WB Dry wall on structural steel.

**3.6 MECHANICAL AND ELECTRICAL EQUIPMENT**

- .1 Paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as indicated.
- .2 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .3 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .4 Do not paint over nameplates.
- .5 Keep sprinkler heads free of paint.

**3.7 SITE TOLERANCES**

- .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
- .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

**3.8 RESTORATION**

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted.
- .4 Remove smears and spatter immediately as operations progress, using compatible solvent.
- .5 Protect freshly completed surfaces from paint droppings and dust to the satisfaction of the Departmental representative.
- .6 Avoid scuffing newly applied paint.

**END OF SECTION**