

1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.

1.2 REFERENCES

- .1 Aluminum Association  
.1 Designation for Aluminum Finishes-1997.
- .2 American Society for Testing and Materials International, (ASTM)  
.1 ASTM C1396/C1396M-14a, Standard Specification for Gypsum Board  
.2 ASTM C475/C475M-15, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.  
.3 ASTM C 514-04(2014), Specification for Nails for the Application of Gypsum Board.  
.4 ASTM C 557-03(2009)e1, Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.  
.5 ASTM C 840-16, Specification for Application and Finishing of Gypsum Board.  
.6 ASTM C 954-15, Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.84 mm to 2.84 mm in thickness.  
.7 ASTM C 1002-14, Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.  
.8 ASTM C 1047-14a, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.  
.9 ASTM C 1280-13a, Specification for Application of Gypsum Sheathing Board.  
.10 ASTM C 1177/C1177M-13, Specification for Glass Mat Gypsum Substrate for Use as Sheathing.  
.11 ASTM C 1178/C1178M-13, Specification for Glass Mat Water-Resistant Gypsum Backing Board.
- .3 Association of the Wall and Ceilings Industries International (AWEI)
- .4 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .5 Underwriters' Laboratories of Canada (ULC)
  - .1 ULC 102, Surface Burning Characteristics of Building Materials and Assemblies.

### 1.3 DELIVERY, STORAGE AND HANDLING

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

### 1.4 SITE ENVIRONMENTAL REQUIREMENTS

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

### 1.5 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

## 2 PRODUCTS

### 2.1 MATERIALS

- .1 Standard board: to ASTM C1396/C1396M Type X 15.9 mm thick, 1220 mm wide x maximum practical length, ends square cut, edges bevelled.
- .2 Water-resistant board: to ASTM C1396/C1396M

Type X 15.9 mm thick, 1220 mm wide x maximum practical length.

- .1 Acceptable material: Dens-Shield as manufactured by Georgia Pacific, or an approved alternate.
- .3 Nails: to ASTM C 514.
- .4 Steel drill screws: to ASTM C 1002.
- .5 Stud adhesive: to ASTM C 557.
- .6 Laminating compound: as recommended by manufacturer, asbestos-free.
- .7 Sealants: in accordance with Section 07 92 10 - Joint Sealing.
- .8 Joint compound: to ASTM C 475, asbestos-free.
- .9 Control Joints: roll formed of zinc with an opening width of 6 mm, depth of 12 mm, for application at the face of the gypsum board. Opening to be tape protected until crack filling is completed, as recommended by gypsum board manufacturer.
- .10 Attic Access Doors: Wood airtight / watertight access door c/w ladder, tested to ASTM E283 and ASTM E331. Door and frame to be 1.6 mm thick c/w continuous exposed stainless steel piano hinge, bulb trim seal and cylinder lock and key. Finish to be 5 stage iron phosphate. with prime coat white alkyd baked on enamel. Size as indicated on drawings.
  - .1 Acceptable Product: Model 66895 as manufactured by FAKRO or an approved equal.

### 3 EXECUTION

#### 3.1 ERECTION

- .1 Do application and finishing of gypsum board in accordance with ASTM C 840 except where specified otherwise.
- .2 Do application of gypsum sheathing in accordance with ASTM C 1280.
- .3 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C 840 except where specified otherwise.

- .4 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 610 mm around perimeter of fixture.
- .5 Install work level to tolerance of 1:1200.
- .6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, and grilles.
- .7 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .8 Install wall furring for gypsum board wall finishes in accordance with ASTM C 840, except where specified otherwise.
- .9 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .10 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .11 Erect drywall resilient furring transversely across studs, spaced maximum 610 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with 25 mm drywall screw.

### 3.2 APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.
- .2 Before application of gypsum board, butter all outside surfaces of electrical and other service boxes, (back, top, sides, and bottom) with a minimum 6 mm layer of acoustical sealant at all partitions that have acoustic insulation.
- .3 Before application of gypsum board, apply bead of acoustic sealant at floor line, at sides, and top of wall perimeter, and at each side of the bottom runner of framing, and at each side of the top track adjacent to the surface above, in all locations which have acoustic insulation.
- .4 Apply single, and double layer gypsum board to

- framing using screw fasteners. Maximum spacing of screws 305 mm on centre.
- .1 Single-Layer Application:
    - .1 Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C 840.
    - .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 10" with base layer joints.
  - .5 Carry all gypsum board to the underside of deck/slab unless noted otherwise.
  - .6 In all partitions where acoustical insulation is indicated, after the application of gypsum board to one side of the studs, caulk the perimeter of holes at the pipes, outlets, conduits, etc. Also butter the backs of all electrical boxes with acoustical sealant. Apply this sealant to the stud side of the gypsum board. Friction fit acoustical insulation between studs with no gaps or open spaces.
  - .7 Where partitions are indicated on the drawings to be fire rated or are around the perimeter of areas where the ceiling space is used as an air plenum, and occur directly under and parallel to an open web steel joists, carry all walls/assembles to the underside of the deck above.
  - .8 Gypsum board is to be carried down to within 3 mm of the floor slab. Gaps in gypsum board will not be permitted.
  - .9 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
  - .10 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.

- .11 Install gypsum board with face side out.
- .12 Do not install damaged or damp boards.
- .13 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

### 3.3 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre.
- .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. 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 set in gypsum board facing and supported independently on both sides of joint.
- .6 Locate control joints at approximate 9.1 m spacing on long corridor runs, and at approximate 15.2 m spacing on ceilings.
- .7 Install control joints straight and true.
- .8 Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous dust barrier.
- .9 Install expansion joint straight and true.
- .10 Splice corners and intersections together and secure to each member with 3 screws.

- .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 following levels in accordance with Association of the Wall and Ceiling Industries (AWCI) International Recommended Specification on Levels of Gypsum Board Finish:
  - .1 Level of finish:
    - .1 Level 4: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
- .14 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .15 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

END OF SECTION

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction / Demolition Management & Disposal.
- .3 Section 01 78 00 - Closeout Submittals.
- .4 Section 07 90 00 - Joint Sealing.

1.2 References

- .1 American National Standards Institute (ANSI)/Ceramic Tile Institute (CTI)
  - .1 ANSI A108.1-09, Specification for the Installation of Ceramic Tile (Includes ANSI A108.1A-C, 108.4-.13, A118.1-.10, ANSI A136.1).
  - .2 CTI A118.3-09, Specification for Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile Setting Epoxy Adhesive (included in ANSI A108.1).
  - .3 CTI A118.4-09, Specification for Latex Portland Cement Mortar (included in ANSI A108.1).
  - .4 CTI A118.5-09, Specification for Chemical Resistant Furan Resin Mortars and Grouts for Tile Installation (included in ANSI A108.1).
  - .5 CTI A118.6-09, Specification for Ceramic Tile Grouts (included in ANSI A108.1).
- .2 American Society for Testing and Materials (ASTM International) International
  - .1 ASTM C 144-11, Specification for Aggregate for Masonry Mortar.
  - .2 ASTM C 207-06(2011), Specification for Hydrated Lime for Masonry Purposes.
  - .3 ASTM C 847-14a, Specification for Metal Lath.
  - .4 ASTM C 979-05/C979M-16, Specification for Pigments for Integrally Coloured Concrete.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .2 CGSB 71-GP-22M, Adhesive, Organic, for

Installation of Ceramic Wall Tile.

.3 CAN/CGSB-75.1-M88, Tile, Ceramic.

.4 CAN/CGSB-25.20-95, Surface Sealer for Floors.

.4 Canadian Standards Association (CSA International)

.1 CAN/CSA-A3000-13, Cementitious Materials Compendium (Consists of A5-98, A8-98, A23.5-98, A362-98, A363-98, A456.1-98, A456.2-98, A456.3-98).

.2 CSA A123.3-05(R2015), Asphalt Saturated Organic Roofing Felt.

.5 Terrazzo Tile and Marble Association of Canada (TTMAC)

.1 Tile Specification Guide 09300 2010, Tile Installation Manual.

.2 Tile Maintenance Guide 2010.

### 1.3 Product Data

.1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Include manufacturer's information on:

.1 Ceramic tile, marked to show each type, size, and shape required.

.2 Chemical resistant mortar and grout (Epoxy and Furan).

.3 Cementitious backer unit.

.4 Dry-set Portland cement mortar and grout.

.5 Divider strip.

.6 Elastomeric membrane and bond coat.

.7 Reinforcing tape.

.8 Leveling compound.

.9 Latex-Portland cement mortar and grout.

.10 Commercial Portland cement grout.

.11 Organic adhesive.

.12 Slip resistant tile.

.13 Waterproofing isolation membrane.

.14 Fasteners.

### 1.4 Samples

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Base tile: submit duplicate 100 x 300 mm sample

panels of each colour, texture, size, and pattern of tile.

- .3 Floor tile: submit duplicate 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile.
- .4 Trim shapes, bullnose cap and cove including bullnose cap and base pieces at internal and external corners of vertical surfaces, each type, colour, and size.
- .5 Adhere tile samples to 11 mm thick plywood and grout joints to represent project installation.

1.5 Delivery,  
Storage and  
Handling

- .1 Deliver materials in containers with labels legible and intact and grade-seals unbroken.
- .2 Store material so as to prevent damage or contamination.
- .3 Store materials in a dry area, protected from freezing, staining and damage.
- .4 Store cementitious materials on a dry surface.

1.6 Waste  
Management and  
Disposal

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management & Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Unused adhesive, sealant and coating materials must be disposed of at an official hazardous material collections site as approved by the Departmental Representative.

- .5 Unused adhesive, sealant and coating materials must not be disposed of into the sewer system, into streams, lakes, onto the ground or in other location where it will pose a health or environmental hazard.
- .6 Broken ceramic materials must be diverted from landfill to a local facility as approved by Departmental Representative

1.7 Environmental Conditions

- .1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12 ° C for 48 h before, during, and 48 h after, installation.
- .2 Do not install tiles at temperatures less than 12 ° C or above 38 ° C.
- .3 Do not apply epoxy mortar and grouts at temperatures below 15 ° C or above 25 ° C.

1.8 Extra Material

- .1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide a minimum of 3 boxes per colour for each tile required for project for maintenance use. Store where directed.
- .3 Maintenance material to be of same production run as installed material.

PART 2 - PRODUCTS

2.1 Floor Tile

- .1 Ceramic tile: to CAN/CGSB-75.1, anti-slip, R9, 300 x 300 x 11 mm size, square edges, textured surface.
- .2 Matching square base, 100 high x 300 long.

- .3 Departmental Representative will provide colour schedule after contract award.
- .4 Colour schedule will be based upon the selection of no more than 2 colours from the manufacturers full range of colours.

2.2 Trim Shapes

- .1 Conform to applicable requirements of adjoining floor and wall tile.
- .2 Use slip resistant trim shapes for horizontal surfaces of showers, overflow ledges, recessed steps, shower curbs, drying area curbs, and stools.
- .3 Use trim shapes sizes conforming to size of adjoining field wall tile, unless specified otherwise.
- .4 Internal and External Corners: Provide trim shapes as follows where indicated.
  - .1 Bullnose shapes for external corners including edges.
  - .2 Coved shapes for internal corners.
  - .3 Special shapes for:
    - .1 Base to floor internal corners to provide integral coved vertical and horizontal joint.
    - .2 Base to floor external corners to provide bullnose vertical edge with integral coved horizontal joint. Use as stop at bottom of openings having bullnose return to wall.
    - .3 Wall top edge internal corners to provide integral coved vertical joint with bullnose top edge.
    - .4 Wall top edge external corners to provide bullnose vertical and horizontal joint edge.

2.3 Mortar and Adhesive Materials

- .1 Portland cement: to CSA-A5, type 10.
- .2 Sand: to ASTM C 144, passing 16 mesh.

- .3 Hydrated lime: to ASTM C 207, Type N.
- .4 Latex additive: formulated for use in portland cement mortar and thin set bond coat.
- .5 Water: potable and free of minerals and chemicals which are detrimental to mortar and grout mixes.

#### 2.4 Grout

- .1 Grout to be used in all floor tile joints to be epoxy reactive resin grout. Colour to be selected by Departmental Representative (minimum 3 colours).
  - .1 Acceptable material: Opticolor as manufactured by Mapei, Flextile, or an approved alternate

#### 2.5 Accessories

- .1 Transition Strips: purpose made metal extrusion, Schiene as manufactured by Schluter, or an approved alternate.
- .2 Sealant: in accordance with Section 07 92 10 - Joint Sealing.

#### 2.6 Mixes

- .1 Portland Cement:
  - .1 Scratch coat: 1 part portland cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand, 1 part water. Adjust water volume depending on water content of sand.
  - .2 Slurry bond coat: portland cement and water mixed to creamy paste. Latex additive may be included.
  - .3 Mortar bed for floors: 1 part portland cement, 4 parts sand, 1 part water. Adjust water volume depending on water content of sand. Latex additive may be included.
  - .4 Levelling coat: 1 part portland cement, 4 parts sand, minimum 1/10 part latex additive, 1 part water including latex additive.
  - .5 Bond or setting coat: 1 part portland cement, 1/3 part hydrated lime, 1 part water.
  - .6 Measure mortar ingredients by volume.

2.7 Cleaning  
Compounds

- .1 Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and leveling compounds and elastomeric waterproofing membrane and coat.
- .2 Materials containing acid or caustic material are not acceptable.

PART 3 - EXECUTION

3.1 Workmanship

- .1 Do tile work in accordance with TTMAC Tile Installation Manual 2000, "Ceramic Tile", except where specified otherwise.
- .2 Apply tile or backing coats to clean and sound surfaces.
- .3 Fit tile around corners, fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even. Do not split tiles.
- .4 Maximum surface tolerance 1:800.
- .5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.
- .6 Lay out tiles so perimeter tiles are minimum 1/2 size.
- .7 Sound tiles after setting and replace hollow-sounding units to obtain full bond.
- .8 Make internal angles square, external angles rounded.
- .9 Use round edged tiles at termination of wall tile panels, except where panel abuts projecting surface or differing plane.

- .10 Install divider strips at junction of tile flooring and dissimilar materials.
- .11 Install built in external corner strip at wall tiles.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 03 30 00 Cast-in Place Concrete

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM F1303-04 (2014), Standard Specification for Sheet Vinyl Floor Covering with Backing. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
  - .2 ASTM E662: Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
  - .3 ASTM F970: Standard Test Method for Static Load Limit.
  - .4 ASTM G21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
  - .5 ASTM F2170 - 16A Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Manufacturer's product to describe:
    - .1 Welding applications.
    - .2 Adhesives.
    - .3 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements.
    - .4 Recycled Content:
      - .1 Submit certification that flooring materials used on this project have a minimum of 10 to 20% recycled content.
    - .5 Submit VOC content of adhesives and that they comply with SCAQMD Rule 1168.

- .3 Samples:
  - .1 Provide samples in accordance with Section 01 33 00.
    - .1 Submit duplicate 300 x 300 mm sample pieces of sheet material, 300 mm long base, nosing, feature strips.
- .4 Closeout Submittals:
  - .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 33 00.
  - .2 Submit 2 samples of each type of material and colour.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's instructions.
- .2 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

#### 1.5 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.
- .2 Moisture vapour emission content of the concrete slab must not exceed the tolerance of the adhesive used, when tested to ASTM F2170.

#### 1.6 MAINTENANCE

- .1 Extra Materials:
  - .1 Provide extra materials of resilient sheet flooring and adhesives in accordance with Section 01 33 00.
  - .2 Provide 10 m<sup>2</sup> of each colour, pattern and type flooring material required for project for maintenance use.
  - .3 Extra materials one piece and from same production run as installed materials.
  - .4 Identify each roll of sheet flooring 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.

### 1.7 PRE-INSTALLATION MEETING

- .1 Organize, and record the proceedings of, a pre-installation meeting that includes the Departmental Representative, Contractor, flooring contractor's project manager or foreman and flooring manufacturer's representative to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.
- .2 Schedule the meeting after completion of subfloor preparation and testing, and prior to installation of the flooring system.

## Part 2 Products

### 2.1 MATERIALS

- .1 Homogeneous Vinyl Sheet Flooring: to ASTM F1913.
  - .1 Pattern: solid, uni-coloured.
  - .2 Thickness: 2.0 mm.
  - .3 Colours: six colours as selected by Department Representative
  - .4 Weld Rods: solid color linoleum weld rod as recommended by Manufacturer or an approved equal and intended for heat welding of seams. Color shall be compatible with field color of flooring or as selected by Department Representative to contrast with field color of flooring.
  - .5 Acceptable Materials: Armstrong Medintech, Mannington Biospec, Tarkett Melodia or an approved equal.
- .2 Requests for approval of other products:
  - .1 Requests shall be accompanied by actual samples of flooring containing one 200 mm x 250 mm sample indicating pattern and 100 mm x 75 mm sample of each available colour. Requests will not be reviewed unless samples are submitted.
  - .2 Consideration will be based upon technical requirements, pattern and available colour range.
- .3 Resilient base: Provide 2 mm thick, 101 mm high, Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861 Type TV, Group 1 - Solid, Style B - Cove.
  - .1 Colour; as selected by Department Representative

- .4 Adhesives:
  - .1 Wall Base Adhesive: Armstrong S-725, Mapei Eco 560 universal flooring adhesive, Mannington MR-101 Acrylic wall base adhesive, or an approved equal.
  - .2 Linolium Adhesive; Armstrong S-780, Mapei Eco 390 solvent free high tack linoleum adhesive, Johnsonite 950 Linolium Adhesive, or an approved equal.
  - .3 Seam Adhesive: Armstrong S-761 Linoleum Seam Adhesive or an approved equal at seams as recommended by the resilient flooring manufacturer.
- .5 Sub-floor filler and leveller: Mapei Planipatch mixed with Planipatch Plus cementitious paste as recommended by adhesive manufacturer.
- .6 Metal edge strips: Aluminum extruded, mill finish with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.
- .7 Sealer and wax: type recommended by resilient flooring material manufacturer for material type and location.
- .8 Moisture Barrier: high-performance, 100%-solids, two-part epoxy, one-coat moisture barrier system for concrete slabs that exhibit moisture vapor emission rates (MVERs) up to 9.07 kg per 92,9 m<sup>2</sup> per 24 hours and reduces transmission rates to less than 1.36 kg.
  - .1 Acceptable Material: Planiseal EMB as manufactured by Mapei or approved alternate.
- .9 Resilient stair nosing and riser:
  - .1 To ASTM F2169M Type TS, Class 2, square nose, 6 mm thick, face ribbed, rubber, one piece length for stair nosing and riser, colour to be selected by Departmental Representative.

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 Clean floor and apply filler; trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.
- .2 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.
- .3 Prime and seal concrete slab to resilient 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 use building ventilation system. Do not let contaminated air recirculate through district or whole building air distribution system.
- .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 Run sheets in direction of traffic. Double cut sheet joints and heat weld according to manufacturer's printed instructions.
- .5 Heat weld seams of linoleum sheet flooring in accordance with manufacturer's printed instructions.
- .6 As installation progresses, and after installation roll flooring with 45 kg minimum roller to ensure full adhesion.
- .7 Cut flooring around fixed objects.
- .8 Install feature strips and floor markings where indicated. Fit joints tightly.
- .9 Install flooring in pan type floor access covers. Maintain floor pattern.

- .10 Continue flooring over areas which will be under built-in furniture.
- .11 Continue flooring through areas to receive movable type partitions without interrupting floor pattern.
- .12 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar.
- .13 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 premoulded end pieces at flush door frames.
- .7 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles.
- .8 Use toeless type base where floor finish will be carpet, coved type elsewhere.
- .9 Install toeless type base before installation of carpet on floors.

### 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.
- .2 Remove excess adhesive from floor, base and wall surfaces without damage.

- .3 Clean, seal and wax floor and base surface to flooring manufacturer's printed instructions.

3.8 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.
- .3 Use only water-based coating for linoleum.

END OF SECTION

1 GENERAL

1.1 SUMMARY

- .1 Section Includes:
  - .1 Material and installation of site applied paint finishes to new interior surfaces, including site painting of shop primed surfaces.
  - .2 Sustainable requirements for construction and verification:
- .2 Related Sections:
  - .1 Section 01 33 00 - Submittal Procedures.
  - .2 Section 01 35 30 - Health and Safety Requirements.
  - .3 Section 01 78 00 - Closeout Submittals.

1.2 REFERENCES

- .1 Department of Justice Canada (Jus)
  - .1 Canadian Environmental Protection Act (CEPA).
- .2 Environmental Protection Agency (EPA)
  - .1 EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24, (for Surface Coatings).
- .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .4 Master Painters Institute (MPI)
  - .1 MPI Architectural Painting Specifications Manual.
- .5 National Fire Code of Canada - 2015.
- .6 Society for Protective Coatings (SSPC)
  - .1 SSPC Painting Manual, Volume Two, 8th Edition, Systems and Specifications Manual.
- .7 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act (TDGA).

1.3 QUALITY ASSURANCE

- .1 Qualifications:
  - .1 Contractor: minimum of five years proven

- satisfactory experience.
- .2 Journeymen: qualified journeymen who have "Tradesman Qualification Certificate of Proficiency" engaged in painting work.
- .3 Apprentices: working under direct supervision of qualified trades person in accordance with trade regulations.
- .2 Mock-Ups:
  - .1 Construct mock-ups as requested.
    - .1 Provide 1220 x 1220 mm mock-up. Prepare and paint designated surface, area, room or item (in each colour scheme) to specified requirements, with specified paint or coating showing selected colours, gloss/sheen, textures.
    - .2 Mock-up will be used:
      - .1 To judge workmanship, substrate preparation, operation of equipment and material application and workmanship to MPI Architectural Painting Specification Manual standards.
      - .3 Locate where directed
      - .4 Allow 24 hours for inspection of mock-up before proceeding with work.
      - .5 When accepted, mock-up will demonstrate minimum standard of quality required for this work. Approved mock-up may remain as part of finished work.
- .3 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 29 - Health and Safety Requirements.

#### 1.4 SCHEDULING

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

- .3 Schedule painting operations to prevent disruption of occupants.

## 1.5 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit product data and instructions for each paint and coating product to be used.
  - .2 Submit product data for the use and application of paint thinner.
  - .3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOCs during application and curing.
- .3 Samples:
  - .1 Submit full range colour sample chips to indicate where colour availability is restricted.
  - .2 Submit 200 mm x 300 mm sample panels of each paint with specified paint or coating in colours, gloss/sheen and textures required to MPI Architectural Painting Specification Manual standards submitted on following substrate materials:
    - .1 3 mm plate steel for finishes over metal surfaces.
    - .2 12 mm birch plywood for finishes over wood surfaces.
    - .3 12 mm gypsum board for finishes over gypsum board and other smooth surfaces.
  - .3 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
  - .4 Test reports: submit certified test reports for paint from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
    - .1 Lead, cadmium and chromium: presence of and amounts.
    - .2 Mercury: presence of and amounts.
    - .3 Organochlorines and PCBs: presence of and amounts.

- .5 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .6 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation and application instructions.
- .7 Closeout Submittals: submit maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals include following:
  - .1 Product name, type and use.
  - .2 Manufacturer's product number.
  - .3 Colour numbers.
  - .4 MPI Environmentally Friendly classification system rating.

#### 1.6 MAINTENANCE

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

#### 1.7 DELIVERY, STORAGE AND HANDLING

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Pack, ship, handle and unload materials in accordance with manufacturer's written instructions.
- .2 Acceptance at Site:
  - .1 Identify products and materials with labels indicating:
    - .1 Manufacturer's name and address.
    - .2 Type of paint or coating.

- .3 Compliance with applicable standard.
- .4 Colour number in accordance with established colour schedule.
- .3 Remove damaged, opened and rejected materials from site.
- .4 Storage and Protection:
  - .1 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
- .5 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .6 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.
- .7 Remove paint materials from storage only in quantities required for same day use.
- .8 Fire Safety Requirements:
  - .1 Provide one 9 kg Type ABC fire extinguisher adjacent to storage area.
  - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
  - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.
- .9 Waste Management and Disposal:
  - .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
  - .2 Collect and separate for disposal plastic, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan (WMP).
  - .3 Separate for reuse and recycling and

- place in designated containers Metal, and Plastic waste in accordance with Waste Management Plan (WMP).
- .4 Place materials defined as hazardous or toxic in designated containers.
  - .5 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal, regulations.
  - .6 Ensure emptied containers are sealed and stored safely.
  - .7 Unused paint materials must be disposed of at official hazardous material collections site as approved by Department Representative.
  - .8 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
  - .9 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
  - .10 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
  - .11 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:
    - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
    - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
    - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
    - .4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
    - .5 Empty paint cans are to be dry prior to disposal or recycling (where

available).

- .12 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
- .13 Set aside and protect surplus and uncontaminated finish materials: Deliver to or arrange collection by organizations for verifiable re-use or re-manufacturing.

## 1.8 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
  - .1 Provide continuous ventilation during and after application of paint. Run ventilation system 24 hours per day; provide continuous ventilation for 7 days after completion of application of paint.
  - .2 Provide heating facilities to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.
  - .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 minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Unless pre-approved written approval by Specifying body and product manufacturer, perform no painting when:
    - .1 Ambient air and substrate temperatures are below 10 degrees C.
    - .2 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
    - .3 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
    - .4 The relative humidity is under 85 % or when the dew point is more than

- 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
- .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
  - .6 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
- .2 Perform painting work when maximum moisture content of the substrate is below:
    - .1 15 % for wood.
    - .2 12 % for gypsum board.
  - .3 Test for moisture using calibrated electronic Moisture Meter. Test concrete floors for moisture using "cover patch test".
  - .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Surface and Environmental Conditions:
    - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
    - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
    - .3 Apply paint when previous coat of paint is dry or adequately cured.
  - .4 Additional interior application requirements:
    - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.

2 PRODUCTS

2.1 MATERIALS

- .1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Provide paint materials for paint systems from single manufacturer.
- .3 Only qualified products with E2 "Environmentally Friendly" rating are acceptable for use on this project.
- .4 Conform to latest MPI requirements for interior painting work including preparation and priming.
- .5 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.
- .6 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.
- .7 Provide paint products meeting MPI "Environmentally Friendly" E2 ratings based on VOC (EPA Method 24) content levels.

2.2 COLOURS

- .1 Department Representative will provide Colour Schedule after contract award.
- .2 Colour schedule will be based upon the selection of no more than 10 base colours and 4 accent colours with a maximum of two deep or bright colours.
- .3 Selection of colours will be from manufacturers full range of colours.
- .4 Perform all colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials not permitted.
- .5 Second coat in a three coat system to be tinted slightly lighter colour than top coat to show

visible difference between coats.

- .6 Except as noted herein or indicated on the finish schedule, interior walls and ceiling surfaces shall be painted in accordance with the following criteria over an appropriate prime/sealer coat:
  - .1 All areas (except as noted): washable latex with G3 (eggshell) finish.
  - .2 Washrooms, shower areas: epoxy G5 (semi-gloss) finish for wet surfaces.
  - .3 Food preparation areas: epoxy G5 (semi-gloss) for dry surfaces.
- .7 Doors shall be painted a different colour than frames, with a G5 (semi-gloss) finish. Seal tops and bottoms of flush wood doors.
- .8 Access doors, prime coated butts and other prime coated hardware, and exposed mechanical and electrical panels/heaters are to match adjacent wall/ceiling surface colour, sheen, and texture.

### 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.

#### 3.2 GENERAL

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

#### 3.3 EXAMINATION

- .1 Investigate existing substrates for problems related to proper and complete preparation of

surfaces to be painted. Report to Department Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.

- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 Maximum moisture content as follows:
  - .1 Stucco, plaster and gypsum board: 12%.
  - .2 Concrete: 12%.
  - .3 Clay and Concrete Block/Brick: 12%.
  - .4 Wood: 15 %.

### 3.4 PREPARATION

- .1 Protection:
  - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Department 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 Department Representative.

- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
  - .1 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
  - .2 Wash surfaces with a biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
  - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
  - .4 Allow surfaces to drain completely and allow to dry thoroughly.
  - .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
  - .6 Use trigger operated spray nozzles for water hoses.
  - .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.
- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .5 Where possible, prime non-exposed surfaces of 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.
- .6 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.
- .7 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in

accordance with MPI requirements. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes or vacuum cleaning.

- .8 Touch up of shop primers with primer as specified.
- .9 Do not apply paint until prepared surfaces have been accepted by Department Representative.

### 3.5 APPLICATION

- .1 Method of application to be as approved by Department Representative. Apply paint by air sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Spray application:
  - .1 Provide and maintain equipment that is suitable for intended purpose, capable of atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
  - .2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
  - .3 Apply paint in uniform layer, with overlapping at edges of spray pattern. Back roll first coat application.
  - .4 Brush out immediately all runs and sags.
  - .5 Use brushes and rollers to work paint into cracks, crevices and places which are not adequately painted by spray.
- .3 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.
- .4 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .6 Sand and dust between coats to remove visible defects.

- .7 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.
- .8 Finish surfaces above custom acoustic, and wood ceilings. Paint all areas and services black.

### 3.6 MECHANICAL/ 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 Mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.
- .3 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .5 Do not paint over nameplates.
- .6 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
- .7 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .8 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.
- .9 Do not paint interior transformers and substation equipment.

### 3.7 INTERIOR PAINT AND COATING SYSTEM

- .1 Formula 2 (Latex): for gypsum board walls and ceiling apply:

- .1 One coat Interior Latex Primer Sealer MPI#50.
- .2 Two coats Interior Latex, Gloss Level 3 MPI#52.
- .2 Formula 4 (Latex): for shop primed ferrous metal surfaces and ductwork apply:
  - .1 Touch up shop primer with primer as provided by fabricator.
  - .2 Spot repairs of Surface Tolerent Metal Primer MPI#23.
  - .3 Two coats Interior Latex, Gloss Level 3 MPI#52.

### 3.8 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.

### 3.9 FIELD QUALITY CONTROL

- .1 Interior painting and decorating work shall be inspected by a Paint Inspection Agency (inspector) acceptable to the specifying authority and local Painting Contractor's Association. Painting contractor shall notify Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- .2 Interior surfaces requiring painting shall be inspected by Paint Inspection Agency who shall notify Department Representative and General Contractor in writing of defects or problems, prior to commencing painting work, or after prime coat shows defects in substrate.
- .3 Where "special" painting, coating or decorating system applications (i.e. elastomeric coatings) or non-MPI listed products or systems are to be used, paint or coating manufacturer shall provide as part of

this work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to Department Representative.

- .4 Standard of Acceptance:
  - .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
  - .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
  - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .5 Field inspection of painting operations to be carried out by independent inspection firm as designated by Department Representative.
- .6 Advise Department Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .7 Cooperate with inspection firm and provide access to areas of work.
- .8 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Department Representative.

### 3.10 RESTORATION

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.

- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Department Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Department Representative.

END OF SECTION