

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .2 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-1988, Building Materials and Assemblies, Standard Method of Test for Surface Burning Characteristics of.
- .3 American Society for Testing and Materials (ASTM)
 - .1 ASTM A653M-94, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .2 ASTM C36-95, Specification for Gypsum Wallboard.
 - .3 ASTM C79-94, Specification for Gypsum Sheathing Board.
 - .4 ASTM C442-92, Specification for Gypsum Backing Board and Coreboard.
 - .5 ASTM C475-94, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .6 ASTM C514-94, Specification for Nails for the Application of Gypsum Board.
 - .7 ASTM C630-93, Specification for Water-Resistant Gypsum Backing Board.
 - .8 ASTM C840-95, Specification and Finishing of Gypsum Board.
 - .9 ASTM C931/931M-95, Specification for Exterior Gypsum Soffit Board.
 - .10 ASTM C954-93, Specification for Steel Drill Screws for the Application of Gypsum Board.
 - .11 ASTM C1047-94, Accessories for Gypsum Wallboard and Gypsum Veneer.
 - .12 ASTM C1280-94, Specification for Application of Gypsum Sheathing Board.
 - .13 ASTM C1178-93, Specification for Glass Mat Water-Resistant Gypsum Backing Board.

1.2 ENVIRONMENTAL REQUIREMENTS

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

PART 2- PRODUCTS

2.1 MATERIALS

- .1 Standard Board: to ASTM C36 regular 12.5mm thick and Type X 16mm thick, 1220mm wide x maximum practical length, ends square cut, edges bevelled. Note: all tenant walls to have 16mm board.
- .2 Liner Board Panels: to ASTM C442 and C1396, 25.4mm thick, fire resistant gypsum core, bevelled edges for insertion between supporting flanges of C-H studs.
- .3 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30, galvanized.
- .4 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .5 Resilient drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .6 Nails to ASTM C514.
- .7 Steel drill screws: to ASTM C 1002.
- .8 Stud adhesive: to CAN/CGSB-71.25. Adhesive not to exceed 50 g/L VOC content as per SCAQMD. Refer to Section 01 35 24.
- .9 Laminating compound: as recommended by manufacturer, asbestos-free.

- .10 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, ABS zinc-coated by electrolytic process, 0.5 mm base thickness, perforated flanges, one (1) piece length per location.
- .11 Acoustic sealant: to CAN/CGSB-19.21. Not to exceed VOC content of 250 g/L.
- .12 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .13 Insulating strip: rubberized, moisture resistant 3mm thick, closed cell neoprene strip, 12mm wide, with self-sticking permanent adhesive on one (1) face, lengths as required.
- .14 Joint compound: to ASTM C475, asbestos-free. Not to exceed 50 g/L.

PART 3 - EXECUTION

3.1 ERECTION

- 1 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.
- 2 Do application of gypsum sheathing in accordance with ASTM C1280.
- 3 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C840 except where specified otherwise.
- 4 Support light fixtures by providing additional ceiling suspension hangers within 150mm of each corner and at maximum 600mm 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 20mm x 60mm 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 stop and to form plenum areas as indicated.

- .10 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.
- .11 Furr openings and around built-in equipment, cabinets and access panels, on four (4) 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 or between the layers of gypsum board, spaced maximum 610mm o.c. and not more than 150mm from ceiling/wall juncture. Secure to each support with 25mm drywall screw.
- .14 Install 150mm continuous strip of 12mm gypsum board along base of partitions where resilient furring installed.

3.2 **APPLICATION**

- 1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are approved.
- 2 Apply single or double layer gypsum board to metal furring or framing using screw fasteners for first layer, screw fasteners for second layer. Maximum spacing of screws 300mm o.c. Apply single layer gypsum board to plywood substrate using screw fasteners.
- 3 Apply 12mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.

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 150mm o.c. using contact adhesive for full length.
- 2 Install casing beads around perimeter of suspended ceilings. Use taped-in type casing bead.
- 3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant. Use taped-in type casing bead. Seal joints where gypsum board abuts masonry 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. Seal joints with sealant.
- 5 Seal perimeter of pressed steel frames with sealant as per Section 07 92 10.
- 6 Construct control joints of preformed units set in gypsum board facing and supported independently on both sides of joint.
- 7 Provide continuous polyethylene dust barrier behind and across control joints.
- 8 Locate control joints where indicated, at changes in substrate construction, at approximate 9 M spacing on long corridor runs at approximate 14 M spacing on ceilings.
- 9 Install control joints straight and true.
- 10 Splice corners and intersections together and secure to each member with three (3) screws.
- 11 Install access doors to electrical and mechanical fixtures specified in respective Sections.
 - 1 Rigidly secure frames to furring or framing systems.
 - 2 Seal perimeter with sealant as per Section 07 92 10.
- 12 Seal perimeter of recessed heating cabinets, fire alarm panels, electrical panels etc. with sealant as per Section 07 92 10.
- 13 Encase the back side of recessed electrical panels where they occur in finished spaces. Extend encasement from floor to ceiling and maintain fire and acoustic rating of partitions.
- 14 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.
- 15 Finish corner beads, control joints and trim as required with two (2) coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- 16 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.

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- .17 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .18 Provide levels of gypsum board finish for locations as follows, in accordance with Gypsum Association GA 214, recommended specifications. Levels of gypsum board finish:
- .1 Level 1: Ceiling plenum and concealed areas, except provide higher level of finish as required to comply with any applicable fire resistance ratings and acoustical ratings, tool marks and ridges are acceptable.
 - .2 Level 2: Gypsum board substrate at hard tile, except remove tile marks and ridges.
 - .3 Level 3: Areas which are to receive heavy-grade vinyl and/or wood wall covering not recommended where smooth painted surfaces or light/medium wall coverings are specified – not applicable to this work.
 - .4 Level 4: Gypsum board surface to receive general paints or light/medium wall vinyl coverings are specified.
 - .5 Level 5: Gypsum board surface specified to receive dry/erasable paint finish.
- .19 The following levels of finish are established as a guide for specific final decoration. The minimum requirements for each level shall be described herein:
- .1 Pre-fill: Use setting-type joint compound. Fill joints between boards flush to top of eased or beveled edge. Fill joints of gypsum board above suspended ceilings in fire-rated partitions.
 - .2 Level 1: (Taping) Butter taping compound into inside corners and joints. Centre tape over joints and press down into fresh compound. Remove excess compound. Tool marks and ridges are acceptable. Tape joints of gypsum board above suspended ceilings.
 - .3 Level 2: (First Coat) Use taping or all-purpose drying-type compound. Immediately after bedding tape, apply skin coat of compound and allow to dry completely in accordance with manufacturer's instructions. Apply first coat of compound over flanges and accessories, and over exposed fastener heads and finish level with broad surface.
 - .4 Level 3: (Second Coat) After first coat has dried, apply second coat of compound over tape and trim, feathering compound 2 inches beyond edge of

first coat. All joint compound shall be smooth, free of tool marks and ridges, and ready for application of finish.

- .5 Level 4: (Third Coat) After second coat has dried, sand surface lightly and apply thin finish coat to joints, fasteners, feathering compound 2 inches beyond edge of second coat. Allow third coat to dry. Apply any additional compound, and touch-up and sand, to provide surface free of visual defects, tool marks, and ridges and ready for application of finish.
- .6 Level 5: (Fourth Coat) After third coat has dried, sand surface lightly and apply thin finish coat to the entire surface. The surface shall be smooth and free of tool marks and ridges, and ready for application of finish. See dry/erase painting specifications in this regard – not applicable to this work.

END OF SECTION 09 21 16

PART 1 - GENERAL

1.1 REFERENCES

- .1 CAN/CGSB-1.40-M89, Primer, Structural Steel, Oil Alkyd Type.
- .2 CAN/CGSB-19.21-M87, Sealing and Bedding Compound Acoustical.
- .3 ASTM C645-88, Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Non-loadbearing channel stud framing: to ASTM C645, 65mm, 92mm, 150mm stud size, as detailed, roll formed from 25 ga. thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at 450mm centres.
- .2 Floor and ceiling tracks: to ASTM C645, in widths to suit stud sizes, 32mm flange height.
- .3 Metal channel stiffener: 457mm x 19mm size, 1.5mm thick cold rolled steel, coated with rust inhibitive coating.
- .4 Acoustical sealant: to CAN/CGSB-19.21.
- .5 Insulating strip: rubberized, moisture resistant 3mm thick foam strip, 12mm wide, with self-sticking adhesive on one face, lengths as required.
- .6 Acoustical batt insulation, to CSA A101, 102mm thickness (or as detailed).

PART 3 - EXECUTION

3.1 ERECTION

- .1 Align partition tracks at floor and ceiling and secure at 610mm o.c. maximum.
- .2 Install damp proof course under stud shoe tracks of partitions on slabs on grade.

- .3 Place studs vertically at 407mm o.c. or 305mm o.c. as noted and not more than 52mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Attach studs to track using screws.
- .6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .7 Installation of pressed steel door/window frames and special supports or anchorage for Work specified in other Sections.
- .8 Provide two (2) studs extending from floor to underside deck at each side of openings wider than stud centres specified. Secure studs together 52mm apart using column clips or other approved means of fastening placed alongside frame anchor chips.
- .9 Install heavy gauge single jamb studs at openings.
- .10 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .11 Frame openings and around built-in equipment, cabinets, access panels, on four (4) sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .12 Provide 42 mm stud, furring channel, 19 mm plywood or 18 ga. Steel sheet secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars, towel rails, and millwork, attached to steel stud partitions.
- .13 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .14 Extend partitions (framing, insulation and gypsum board) to underside of floor or roof deck except where noted otherwise on drawings.
- .15 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use 52mm leg ceiling tracks.

- .16 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .17 Install two (2) continuous beads of acoustical sealant under studs and tracks around perimeter of sound control partitions.
- .18 Install acoustical batt insulation where indicated. Ensure continuity at recessed electrical devices, etc. Tightly pack acoustic batt insulation where top track abuts steel deck.

END OF SECTION 09 22 16

PART 1 - GENERAL

1.1 RELATED WORK

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|----|---|-------------------------|
| .1 | Suspension systems for gypsum board ceilings: | Section 09 21 16 |
| .2 | Acoustical units: | Section 09 51 13 |
| .3 | Trim for recessed mechanical fixtures: | See Mechanical Drawings |
| .4 | Trim for recessed light fixtures: | See Electrical Drawings |

1.2 REFERENCES

- .1 ASTM C635-91, Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
- .2 ASTM C636-91, Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.

1.3 DESIGN REQUIREMENTS

- .1 Maximum deflection: 1/360th of span to ASTM C635 deflection test.

1.4 SAMPLES

- .1 Submit samples.
- .2 Submit one (1) representative model of each type ceiling suspension system.
- .3 Ceiling system to show basic construction and assembly, treatment at walls, recessed fixtures, splicing, interlocking, finishes, acoustical unit installation.

1.5 REGULATORY REQUIREMENTS

- .1 Fire-resistance rated suspension system: certified by a Canadian Certification Organization accredited by Standards Council of Canada. None on this project.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Intermediate duty system to ASTM C635.
- .2 Basic materials for suspension system: commercial quality cold rolled steel, zinc

coated.

- .3 Suspension system: non fire rated, made up as follows:
 - .1 two directional exposed tee bar grid.
 - .2 610mm x 1220mm or 610mm x 610mm or as detailed.
- .4 Exposed tee bar grid components: shop painted satin sheen, white. Components die cut. Main tee with double web, rectangular bulb and 25mm rolled cap on exposed face. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection. Insure colour match throughout entire new installation and where abutting or extending existing grid.
- .5 Hanger wire: galvanized soft annealed steel wire.
 - .1 12 ga. diameter for access tile ceilings.
 - .2 9 ga. diameter for gypsum board ceilings.
- .6 Hanger inserts: purpose made.
- .7 Carrying channels: 38mm x 20mm channel, of galvanized steel.
- .8 Accessories: splices, clips, wire ties, retainers and wall moulding flush, to complement suspension system components, as recommended by system manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Installation: in accordance with ASTM C636 except where specified otherwise.
- .2 Install suspension system to manufacturer's instructions.
- .3 Do not erect ceiling suspension system until Work above ceiling has been inspected by Departmental Representative and General Contractor.
- .4 Secure hangers to overhead structure using attachment methods acceptable to Departmental Representative.
- .5 Install hangers spaced at maximum 1220mm centres and within 150mm from ends of main tees.

- .6 Lay out system according to reflected ceiling plan.
- .7 Ensure suspension system is coordinated with location of related components.
- .8 Install wall moulding to provide correct ceiling height.
- .9 Completed suspension system to support superimposed loads, such as lighting fixtures, diffusers, grilles and speakers.
- .10 Support at light fixtures with additional ceiling suspension hangers within 150mm of each corner and at maximum 610mm, around perimeter of fixture or panel.
- .11 Interlock cross member to main runner to provide rigid assembly.
- .12 Frame at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights.
- .13 Finished ceiling system to be square with adjoining walls and level within 1:1000.

3.2 CLEANING

- .1 Touch up scratches, abrasions, voids and other defects in painted surfaces.

END OF SECTION 09 22 27

PART 1 - GENERAL

1.1 REFERENCES

- .1 Do tile work in accordance with Installation Manual 200-1979, "Ceramic Tile", produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.

1.2 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 Submittal Procedures.
- .2 Submit duplicate sample panels of each colour, texture, size, and pattern of tile.
- .3 Provide a mock-up full height wall section finished as specified for approval of installation prior to proceeding with remainder of the Work. Mock-up may be incorporated into the Work as approved by the Departmental Representative.
- .4 Provide a mock-up area of flooring finished as specified for approval of installation prior to proceeding with remainder of the Work. Mock-up may be incorporated into the Work as approved by the Departmental Representative.

1.3 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 Submittal Procedures.
- .2 Indicate control joint locations.

1.4 MAINTENANCE MATERIAL

- .1 Provide maintenance materials in accordance with Section 01 78 00 Closeout Submittals.
- .2 Provide minimum 100 sq ft. of each type and colour of tile required for project for maintenance use. Store where directed.
- .3 Maintenance material to be of same production run as installed material.

1.5 ENVIRONMENTAL REQUIREMENTS

- .1 Maintain air temperature and structural base temperature at ceramic tile installation

area above 12°C for 48 hours before, during and 48 hours after, installation.

1.6 WARRANTY

- .1 Submit a Warranty for the work of this Section for a period of one (1) year.

PART 2 - PRODUCTS

2.1 WALL TILE

- .1 Wall Tile:
 - .1 Acceptable product: (ceramic wall tile) to meet requirements of CAN/CGSB-75.1 M88, Type 2.

2.2 MORTAR & ADHESIVE MATERIALS

- .1 Mortar and adhesives not to exceed VOC content of 50 g/L.
- .2 Wall Tile:
 - .1 Generally to CGSB-71-GP-22M, Type 1, Thinset Method as 200-11A.

2.3 GROUT

- .1 Walls:
 - .1 Polymer modified grout, colour selected by Departmental Representative.
 - .2 Grout preparation to Manufacturer's instructions.

2.4 ACCESSORIES

- .1 Sealant: in accordance with Section 07 92 10 Joint Sealants, colour selected by Departmental Representative.

PART 3 - EXECUTION

3.1 WORKMANSHIP

- .1 Apply tile to clean and sound surfaces.
- .2 Examine and approve areas to be covered prior to commencing work.

- .3 Grout tiles in strict accordance with manufacturer's instructions using rigid rubber floor grouting float.
- .4 Clean installed tile surfaces after installation and grouting cured.
- .5 Apply sealant at junctions with steel door frames and other dissimilar materials including plumbing fixtures, vanities and accessories.
- .6 Fit tile around fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.
- .7 Maximum surface tolerance 1:800.
- .8 Make joints between tile uniform and approximately 16 mm wide for floor 3 mm for wall, plumb, straight, true, even and flush with adjacent tile. Align patterns. Where required by floor slope base is to follow slope.
- .9 Lay out tiles so perimeter tiles are minimum ½ size.
- .10 Sound tiles after setting and replace hollow - sounding units to obtain full bond.
- .11 Make internal angles square, external angles and at termination with metal edge strip in matching colour for walls.
- .12 Allow minimum 24 hours after installation of tiles, before grouting.
- .13 Clean installed tile surfaces after installation and grouting cured

3.2 WALL TILE

- .1 Install in accordance with TTMAC detail 200-11A "Vitreous Wall Tile Installed over Interior Dry Surfaces Only Using Thin Set Bond Coat and Dry Curing Wall Grout, Thin Set Method", "Ceramic Mosaic Tile Installed over Masonry or Concrete Backing with a Slight Levelling Coat Using Thin Set Bond Coat and Thin Set System Grout, Thin Set Method."

END OF SECTION 09 30 13

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CSA B111-1974, Wire Nails, Spikes and Staples.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units.

1.2 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00.
- .2 Submit duplicate samples of each type acoustical units.

1.3 ENVIRONMENTAL REQUIREMENTS

- .1 Permit wet Work to dry before commencement of installation.
- .2 Maintain uniform minimum temperature of 15°C and humidity of 20% before and during installation. All in accordance with manufacturer's recommendations.
- .3 Store materials in work area 48 hours prior to installation.

1.4 EXTRA MATERIALS

- .1 Provide acoustical units amounting to 2% of gross ceiling area for each pattern and type required for project.
- .2 Extra materials to be from same production run as installed materials.
- .3 Clearly identify each type of acoustic unit, including colour and texture.
- .4 Deliver to the Departmental Representative as directed, upon completion of the Work of this section.
- .5 Store where directed by the Departmental Representative.

1.5 REGULATORY REQUIREMENTS

- .1 Fire-resistance rated floor/ceiling and roof/ceiling assembly: Certified by a Canadian

Certification Organization accredited by Standards Council of Canada. NOTE: There are no fire rated ceilings required on this project. (None required on this project).

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Acoustic units for suspended ceiling system to CAN/CGSB-92.1.
 - .1 **Type 1**
 - .1 **Note: this specification sets minimum standard, nevertheless, tile is to match existing.**
 - .2 EcoLogo certified / Cellulose fibre with minimum 75% recycled content.
 - .3 Pattern: fine fissured.
 - .4 Frame spread rating of 25 or less.
 - .5 Noise reduction coefficient (NRC) designation range of .55 to .65.
 - .6 Light reflectance range of LR-1 (over 75%).
 - .7 Ceiling plenum sound transmission range of 35 - 39.
 - .8 Edge type: square.
 - .9 Colour: white.
 - .10 Size 610mm x 610mm x 16mm thick or as detailed.
 - .11 Shape: flat.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Do not install acoustical panels and tiles until Work above ceiling has been inspected by Departmental Representative and General Contractor.

3.2 INSTALLATION

- .1 Install acoustical ceiling units and tiles in ceiling suspension system.

3.3 INTERFACE WITH OTHER WORK

- .1 Co-ordinate ceiling Work to accommodate components of other sections, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustical ceiling components.

3.4 CLEAN-UP

- .1 Clean soiled or discoloured exposed surfaces of tiles on completion of the Work.
- .2 Replace tiles that are visibly damaged, marked or uncleanable.

END OF SECTION 09 51 13

PART 1 - GENERAL

1.1 SCOPE OF WORK

- .1 The Work associated with the trade includes, but is not necessarily limited to, all materials, labour and equipment required to complete resilient sheet flooring as described herein.

1.2 REFERENCES

- .1 CSA A126.6 Sheet vinyl flooring products.

1.3 MAINTENANCE DATA

- .1 Provide maintenance data for resilient flooring for incorporation into Operation and Maintenance Manual specified in Section 01 78 00.

1.4 QUALITY ASSURANCE

- .1 Installer Qualifications: Select installer experienced to perform Work of this Section who has previous experience of projects of this type and who is acceptable to manufacturer.
- .2 Sample:
 - .1 Provide a mock-up sample of seaming, and sealant joint with perimeter.
 - .2 Submit samples in accordance with Section 01 33 00.
- .3 Regulatory Requirements:

Fire performance characteristics: provide resilient sheet vinyl flooring to meet the following test performance criteria:

 - .1 Critical Radiant Flux: Class 1 Rating ASTM E648 (0.45 watts/cm² or greater).

1.5 DELIVERY & STORAGE

- .1 Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer's original unopened, undamaged containers bearing name and brand of the manufacturer, colour identification and handling and storage instructions.
- .2 Storage and Protection: Store materials in fully enclosed areas, protected from exposure to harmful weather conditions and at a temperature of between 18°C and 27°C.

1.6 ENVIRONMENTAL REQUIREMENTS

- .1 Environmental Requirements/Conditions: In accordance with manufacturer's recommendations, areas to receive flooring shall be clean, fully enclosed, weathertight and maintained at a uniform temperature between 20°C and 27°C for at least 48 hours before installation and 48 hours after installation. Condition flooring materials at the same uniform temperatures.

1.7 SEQUENCING AND SCHEDULING

- .1 Finish Operations: Install flooring and accessories after finishing operations, including painting and ceiling operations have been completed.
- .2 Concrete Curing: Do not install resilient flooring over concrete substrates until substrates have cured and are sufficiently dry to bond with adhesive in accordance with resilient flooring manufacturer's recommended bond and moisture test.

PART 2 - PRODUCTS

2.1 MATERIALS-SAFETY FLOOR

- .1
 - .1 Meet requirements of ASTM F2034.
 - .2 Non-directional pattern required.
- .2 Heat welding rod matching as supplied by flooring manufacturer.
- .3 One (1) colour as selected by Departmental Representative from manufacturer's standard range.
- .4 Adhesive: as recommended by flooring manufacturer and approved by Departmental Representative.
- .5 Sub-floor filler and leveler: 2 part latex type filler requiring no water as recommended by flooring manufacturer for use with their product. Note that the floor slab is existing. Contractors are to investigate existing conditions to ensure that allowance is made for adequate floor preparation materials and labour.

.6 Resilient base: Refer to drawings.

.7 Schedule: Refer to drawings.

PART 3 - EXECUTION

3.1 INSPECTION

.1 Ensure concrete floors are dry, by using test methods recommended by flooring manufacturer (less than 3.5% by carbide method).

3.2 SUB-FLOOR TREATMENT

.1 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.

.2 Clean floor and apply filler: trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry. Visit site prior to bidding to determine extent of repair Work required.

.3 Prime concrete slab and plywood subfloor to resilient flooring manufacturer's printed instructions.

.4 A uniform room temperature between 18°C and 25°C should be maintained throughout the installation of the flooring and for 24 hours prior to installation. The flooring to be conditioned at this room temperature for 24 hours before installation.

3.3 FLOORING APPLICATION

.1 Apply adhesive uniformly using recommended trowel in accordance with flooring manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place.

.2 Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.

.3 Run sheets in direction of traffic. Double cut sheet joints and continuously seal

.4 According to manufacturer's printed instructions.

- .5 As installation progresses, and after installation, roll flooring in accordance with manufacturer's printed instructions to ensure full adhesion.
- .6 Cut flooring neatly around fixed objects and seal at all penetrations.
- .7 Continue flooring over areas which will be under built-in furniture.
- .8 Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.
- .9 Install metal edge strips at unprotected or exposed edges where flooring terminates.
- .10 Caulk full perimeter at junction with walls and fixtures.

3.4 INITIAL CLEANING AND WAXING

- .1 Remove excess adhesive from floor, base and wall surfaces without damage.
- .2 Clean and seal floor and base surface to flooring manufacturer's printed instructions.

3.5 PROTECTION OF FINISHED WORK

- .1 Protect new floors from time of final set of adhesive until final inspection.

END OF SECTION 09 65 16

PART 1 - GENERAL

1.1 SUMMARY

- .1 The exterior and interior materials and finishes listed in this section complement and complete other technical sections that make reference to this section.
- .2 Use this section in conjunction with Drawings and Floor & Wall Finish sections for detailed description of material locations.
- .3 Acceptable Materials:
Selected for inclusion in the Finishes Legend indicate the established quality, aesthetic criteria and patterning for the facility. There may be other materials that perform similarly to the listed materials and that variations in a substitute material's appearance may not exclude its use for this Project. Bidders are encouraged to submit products in accordance with Section 01 61 00, and that the products meet the requirements listed in the technical Sections. Substitute materials shall not change the overall appearance, thickness or compatibility with other products associated with the assembly.

1.2 SUBMITTALS

- .1 Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit samples of each type of carpet tile and adhesive.
- .3 Submit verification to demonstrate compliance with CAN/ULC S102.2-03.
- .4 Submit proof that carpet has been tested and passed the Indoor Air Quality (IAQ) Carpet Testing Program requirements of the Carpet and Rug Institute (CRI) Green Label Plus and the Canadian Carpet Institute (CCI).
- .5 Submit report verifying that tuft bind meets requirements of CAN/CGSB-4.129 when tested to CAN/CGSB-4.2 No.77.1.
- .6 Submit report outlining proposed dust control measures.
- .7 Submit carpet schedule using same room designations indicated on drawings.
- .8 Carpet fibre and/or backing must be recyclable under an existing program by the carpet manufacturing mill or fibre producer. Submit program details of carpet

recycling program and associated costs.

1.3 PRODUCT DATA

- .1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit product data sheet for each type of carpet, adhesive including pre-applied adhesive or alternate adhesive methods, carpet protection and subfloor patching compound.
- .3 Submit WHMIS MSDS – Material Safety Data Sheets acceptable to Labour Canada and Health Canada for carpet adhesive and seam adhesive. Indicate VOC content.
- .4 Submit data on specified products, describing physical and performance characteristics, sizes, patterns, colours, and methods of installation.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Indicate locations and size of accent tiles for carpeted areas.
- .3 Indicate direction, special patterns, and other details required to clarify work.
- .4 Submit drawings showing columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cut-outs are required as well as direction of carpet pattern and location of edge mouldings and edge bindings for review prior to installation of carpet.

1.5 SAMPLES

- .1 Submit the following samples and specifications as part of their bid submissions, in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit duplicate full technical specifications and architectural product folders of standard range carpet goods, which include samples of full range of colours as well as four full size tile samples to indicate texture and patterning for each carpet type.

1.6 MOCK-UPS

- .1 Provide mock-ups as indicated in Section 01 45 00.

1.7 **CLOSEOUT SUBMITTALS**

- .1 Submit operation and maintenance data for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.
- .2 Closeout submittal to include maintenance procedures, recommendations for maintenance materials and equipment and suggested schedule for cleaning.

1.8 **QUALIFICATIONS**

- .1 Installer Qualifications:
 - .1 Flooring contractor requirements.
 - .1 Specialty contractor normally engaged in this type of work, with prior experience in installation of these types of materials.
 - .2 Certified by carpet manufacturer prior to bid submission.
 - .3 Must not sub-contract labour without written approval of the Departmental Representative.
- .2 Be responsible for proper product installation, including floor testing and preparation as specified and in accordance with carpet manufacturer's written instructions.

1.9 **REGULATORY REQUIREMENTS**

- .1 Prequalification: compliance with Department of Consumers and Corporate Affairs regulations under "Hazardous Products Act", Part II of the Schedule, tested to CAN/CGSB-4.2-No.27.6.
- .2 Indoor Air Quality: compliance with CRI/CCI Green Label Indoor Air Quality Program, CRI/CCI-IAQ requirements for maximum total volatile chemicals released into air. Label each carpet product with CRI/CCI-IAQ label.

1.10 **DELIVERY, STORAGE AND HANDLING**

- .1 Label packaged materials.
- .2 Handle in strict accordance with manufacturer's recommendations.

1.11 **WARRANTY**

- .1 For colour fastness the manufacturer's product warranty period shall be for static control, and wear beyond 10% of pile fibre, and on pro-rated basis for 120 months for light exposure and 60 months for atmospheric contaminants. Furthermore, if the

installed carpet is found to have a rating of 3 or less on the AATCC gray scale within the warranted time and is the result of light exposure, ozone, or oxides of nitrogen, the carpet in the affected area will be replaced.

1.12 MAINTENANCE MATERIAL

- .1 Provide required information in accordance with Section 01 78 00 Closeout Submittals.
- .2 Provide extra material of each type and colour plus sufficient adhesive materials in sealed containers or packages.
- .3 Maintenance materials to be full size piece of same production run as installed materials.
- .4 Provide additional materials as follows:
 - .1 1% of total area of each Carpet C3, C4, C5, C6 and C7.
 - .2 2% of total area for each of carpets C1 and C2.

1.13 ENVIRONMENTAL CONDITIONS

- .1 Ventilate area of work by use of approved portable supply and exhaust fans. Provide 72 h notice before commencing carpet tile installation.

1.14 PROJECT/SITE ENVIRONMENTAL REQUIREMENTS

- .1 Moisture: Ensure substrate is within moisture limits and alkalinity limits prescribed by manufacturer. Prepare moisture testing and provide report to Departmental Representative
- .2 Temperature: Maintain ambient temperature of not less than 18°C from 48 hours before installation to at least 48 hours after completion of work.
- .3 Relative Humidity: Maintain relative humidity between 10 and 65% RH for 48 hours before, during and 48 hours after installation.
- .4 Do not install carpet until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete.

1.15 SPECIAL PROTECTION & PRECAUTIONS

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous

materials; and regarding labelling and the provision of material safety data sheets acceptable to Labour Canada.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MATERIALS

- .1 Materials listed below describe a minimum standard for products to be supplied.

2.2 CARPET TILE

- .1 Patterns: A total of three distinct product types with pile and surface appearance as follows. Products from manufacturer's standard range of product.
 - .1 Carpet Type: - F1, Field
 - Style 'A'
 - Tufted loop with LG/MED patterning with minor colour variations
 - .2 Carpet Type: - F2, Field
 - Style 'B'
 - Tufted loop with small patterning with minor colour variations
 - .3 Carpet Type: - F3, Accent
 - Style 'C'
 - Tufted loop, solid colour appearance with minor colour variations
- .2 Colours: field carpet tile, minimum of 2 coordinating styles in coordinating colours (minimum 12 colours) and patterns varying in scale. Minimum of 2 coordinating styles to be "non-directional" or "random" pattern and installation (installer places carpet on floor without any regard to arrows or patterning).
- .3 Carpet Tile Dimensions: minimum 455mm x 455mm, max 610mm x 610mm.
- .4 Carpet: to meet CAN/CGSB 4.129 as follows:
 - .1 Certified for flammability to Health CDN Regulations under "Hazardous Products (Carpet) Regulations" Part II of the Schedule.
 - .2 Maximum flame spread rating 300; maximum smoke developed classification 500 when tested to CSA/ULC-S102.2
 - .3 Certified to carpet & Rug Institute's and the Canadian Carpet Institute's IAQ Requirements.
 - .4 Performance rating to ASTM D 5417.

- 5 Water consumption for final product:
 - .1 100% solution dyed: 0 litre / m².
 - .2 Combination of solution dyed and maximum 30% yarn dyed: maximum 22 litres / m².
- .6 Construction:
 - .1 Tufted Loop.
- .7 Pile Surface Appearance:
 - .1 Multi-Colour, Textured Pattern.
- .8 Pile Fibre: CAN/CGSB 4.129:
 - .1 100% first quality, bulk continuous filament nylon, branded and certified, externally extruded by a fibre producer offering a construction and performance standards testing program for the carpet specified, either: type 6.6 or 6, Trilobal or Square Hollowfill Cross-section. Fibre shape to have maximum Modification Ratio of 2.5 for soil release capabilities. Fibre identification to AATCC 20. Acceptable suppliers: Invista, Solutia, Universal, Aqafil, Nylene, or Zeftron.
 - .2 Static Control: refer to Clause 2.2.27.
- .9 Tuftbind: ASTM D 1335, minimum 35 N.
- .10 Yarn Ply: combination of two ply and one ply.
- .11 Pile Weight: minimum 576gm/m² (17 oz sq yard).
- .12 Pile Density: minimum 5400.
- .13 Stiches/Gauge: balanced
- .13 Pile Height: minimum 2.00mm, maximum 5.00mm.
- .14 Kilotex Rating: minimum 9.5.
- .15 Yarn Dyed Method: 100% solution dyed or a combination of solution dyed and maximum 30% yarn dyed.
- .16 Total Weight: minimum 4374 gm/m² for carpet tile with fibreglass or nylon reinforced vinyl composite secondary backing and 3700 gm/m² for carpet tile with polyolefin secondary backing

- .17 Colourization: multiple colour tones.
- .18 Colourfastness to light: CAN/CGSB 4.2 No. 18.3, AATCC 16E, minimum L4 after 40 hours.
- .19 Colourfastness to Atmospheric Fading: to AATCC 129 and AATCC 23.
- .20 Colourfastness to Crocking: AATCC 165 greater or less than 4.0 wet, dry.
- .21 Primary Backing: non-woven synthetic with latex or similar adhesive for tufted products or fiberglass reinforced vinyl for fusion bonded products. Non-PVC cushion.
- .22 Secondary Backing: fibreglass or nylon reinforced vinyl composite: polyolefin.
 - .1 Density: as per ASTM D 1667.
 - .2 Dimensional Stability: ISO 2551 (Aachner test), maximum 0.1% change.
 - .3 Delamination: ASTM D3936: minimum 5N/cm.
- .23 Soil Resistance: An average of 3 fluorine analyses AATCC 189 of a single composite sample to be a minimum of 500 ppm fluorine by weight when new and an average of 3 fluorine analyses using AATCC 190 to be a maximum of 400 ppm fluorine by weight after 2 AATCC 171 (HWE) cleanings.
- .24 Stain Resistance: AATCC 171 minimum 2 washings to stimulate removal of topical treatments by hot water extraction, followed by: AATCC 175, minimum of 8 using AATCC Red Dye 40 Reference Scale.
- .25 Appearance Retention: Hexapod Drum ASTM D5252 for 12,000 cycles, minimum rating of 3.0 using CRI TM-101 Reference Scales.
- .26 Indoor Air Quality: maximum 0.6 mg/m²/hr total VOC emissions tested in accordance to ASTM D5116.
- .27 Permanent static control: to AATCC 134, 3500V maximum at 20% RH and 22°C.
- .28 Antimicrobial: to AATCC 138 washed and AATCC 174 Part 2 & 3.
- .29 Recycling:
 - .1 New Carpet: Must be eligible for recycling by the supplying mill or fibre producer within an existing program in place; submit program parameters.

- .30 Recycling Content:
 - .1 Total Recycled Content: minimum of 40% recycled content.
- .31 Adhesives:
 - .1 Releasable, pressure sensitive adhesive to conform to carpet manufacturers specifications.
 - .1 Low VOC content in accordance with CRI requirements:
 - .1 Total volatile organic compounds: 10.0 mg/sq.m/hr.
 - .2 Formaldehyde: 2.4m/sq.m/hr.
 - .3 2-Ethyl-11-Hexanol 2.5/mg/sq.m/hr.
 - .2 Acrylic polymer emulsion, resin mixture, latex adhesive.
 - .3 Alternate adhesive method may be required to be used (e.g. “peel and stick”) if agreed on by Lessor and Lessee.
- .32 Accessories:
 - .1 Seaming tape: types recommended by carpet manufacturer for purpose intended.
 - .2 Seaming sealer adhesive:
 - .1 Type recommended by carpet manufacturer for purpose intended.
 - .2 Low odour base type free of volatile hydrocarbons such as toluene and mineral spirits.
 - .3 Provide MSDS acceptable to Labour Canada and Health and Welfare Canada for the carpet tile adhesive and seam cement proposed for use.
 - .3 Binder bars: as recommended by carpet manufacturer.
 - .4 Carpet protection: non-staining heavy-duty Kraft paper.
 - .5 Concrete floor sealer: to CAN/CGSB/CGSB 25.20, Type 1.
 - .6 Sub floor filler: premix latex requiring only water to produce cementitious paste.
 - .7 Sub floor patching compound: Portland cement base filler, mix with latex and water to form a cementation paste.
- .33 Termination/Transition Strip
 Johnsonite CD-XX-B in colour as selected by Departmental Representative.
- .34 Carpet Tile Base (CB):
 Type: provide unbacked continuous 100mm (4”) high base c/w binding.
 Mnfg: match adjacent floor carpet tile.
 Patt: match adjacent floor carpet tile.
 Edge: colour matched tape binding.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Keep surfaces dry, clean, free from dust, dirt mortar, grease, wax or extraneous matter. Clean before starting work.
- .2 Follow recommended procedures for installation provided by the manufacturer. Comply with recommendations for application of floor covering adhesive.
- .3 Prepare carpet tile for installation. Obtain the best shade matching possible. Do not glue down until the Departmental Representative has reviewed. (Dry run).
- .4 Prepare surface in accordance with the Canadian Carpet Institute's document, Installation Standard.

3.2 TEST LAYOUT

- .1 Prepare mock areas as indicated in Section 01 45 00.
- .2 Prior to installation, lay out a 9 m² (97 ft²) area of carpet tile with joint and nap as intended for the finished installation.
- .3 Obtain approval of the Departmental Representative before commencing with the installation.

3.3 INSTALLATION

- .1 Install in accordance with manufacturer's printed instructions and in accordance with Contract Carpet Manual, Standard for Installation of Textile Floorcovering Materials No. 001.
- .2 Install field carpet tile with pattern as indicated by the Departmental Representative and verify through a mock-up. Install carpet in manner approved i.e. random, quarter turn, brick, etc. Obtain approval of the Departmental Representative before proceeding with remainder of installation.
- .3 Finish installation to present smooth wearing surface free from conspicuous seams, burring and other faults.
- .4 Use material from same dye lot. Ensure colour, pattern and texture match within any

one visual area.

- .5 Fit neatly around architectural, mechanical, electrical and telephone outlets, and furniture fitments, around perimeter of rooms into recesses and around projections.
- .6 Install carpeting to access covers.
- .7 Deliver carpet tile to site clearly tagged to show precise floor and location for best colour matching.
- .8 Install carpeting after all finishing trades have completed their work.
- .9 Install carpet tile using approved adhesive and equipment and in accordance with methods recommended by the carpet tile manufacturer.
- .10 Cut carpet tile to fit accurately around perimeter of rooms into all recesses and around fixtures.
- .11 Install edging strips at all openings or doorways and where carpet tile abuts other floor covering.
- .12 Do all cutting and punching of the carpet tiles at inserts for power and telephone outlets.
- .13 Do all cutting and setting of carpet tiles in recesses of hand holes to the electrical access floor duct system.
- .14 Make cutouts for all floor mounted service boxes, receptacles, switches, hardware where they occur on carpet tile. Keep holes to an absolute minimum diameter to allow services involved to pass through and that trim will completely hide hole when installed. Cooperate and coordinate with electrical trade to ensure correct location of outlets is obtained.
- .15 At completion, carpet tile shall be smooth and even, free of any discoloration or soiling, with inconspicuous joints.

3.4 TRANSITION STRIPS

- .1 Install transition strips at exposed carpet edges or dissimilar materials and centre under doors where joints occur in door openings.

3.5 SEAMS

- .1 Make carpet seams and joints virtually invisible.

3.6 CLEAN-UP AND PROTECTION

- .1 After completion of carpeting operations in an area, remove all carpeting waste and all other rubbish and debris from the premises and leave the installation clean.
- .2 Deposit remnants and left-over pieces with the Departmental Representative for future repairs, if so directed by the Departmental Representative.
- .3 Immediately after laying of carpet tile, replace all damaged or defective carpet tile at no cost to the Contract, thoroughly vacuum clean, then cover completely and continuously with protective membrane. Secure at abutting surfaces and other materials. Lap all joints at least 100 mm (4”) and continuously secure using tape. Restrict entry to carpet tiled areas until protective covering is in place, and then only with the Departmental Representative’s approval. Remove membrane covering when directed by the Departmental Representative.

END OF SECTION 09 68 00

PART 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.

1.2 REFERENCES

- .1 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33
- .2 Environmental Protection Agency (EPA)
 - .1 EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 - 1995, (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 –2014
- .5 National Fire Code of Canada - 1995
- .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), 1992, c. 34 .

1.3 QUALITY ASSURANCE

- .1 Qualifications:
 - .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 in accordance with Section 01 45 00 –Testing Quality Control.
 - .1 Provide 1000 mm x 1000 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. Remove mock-up and dispose of materials when no longer required and when directed by the Departmental Representative.
- .3 Pre-Installation Meeting:
 - .1 Convene pre-installation meeting, minimum one week prior to beginning on-site installations.
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Coordination with other building subtrades.
 - .4 Review manufacturer's installation instructions and warranty requirements.
- .4 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.4 SCHEDULING

- .1 Submit work schedule for various stages of painting to the Departmental Representative for review. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from the Departmental Representative for changes in work schedule.
- .3 Schedule painting operations to prevent disruption of occupants.

1.5 ACTION AND INFORMATIONAL 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 duplicate 200 x 300 mm sample panels of each paint, stain, clear coating, special finish 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 13 mm birch plywood for finishes over wood surfaces.
 - .3 50 mm concrete block for finishes over concrete or concrete masonry surfaces.
 - .4 13 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 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .5 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation application instructions.
- .6 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 primer, stain, finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
- .3 Delivery, storage and protection: comply with the Departmental 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 Section 01 61 00 - Common Product Requirements and 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 dry chemical fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in

accordance with National Fire Code of Canada requirements.

1.8 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 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.
 - .2 Provide continuous ventilation for seven days after completion of application of paint.
 - .3 Coordinate use of existing ventilation system with the Departmental Representative and ensure its operation during and after application of paint as required.
 - .4 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.
 - .5 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 temperatures. 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 Allow new concrete and masonry to cure minimum of 28 days.
 - .2 15% for wood.
 - .3 12% for plaster and 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 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of the Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

1.9 **DEFINITIONS**

- .1 **Gloss Levels:** Standard coating terms defined by MPI Manual apply to products of this Section as follows and are used to designate required gloss levels in designated areas.
 - .1 **G1 – Matte of Flat:** Lustreless or matte finish with a gloss range below 10 when measured at 85° to meter and 0 to 5 when measured at 60°.
 - .2 **G2 – Velvet:** Matte to low sheen finish with a gloss range of 10 to 35 when measured at 85° to meter and 0 to 10 when measured at 60°.
 - .3 **G3 – Eggshell:** Low sheen finish with a gloss range of 10 to 35 when measured at 85° to meter and 20 to 35 when measured at 60°.
 - .4 **G4 – Satin:** Low to medium sheen with a gloss range of minimum 35 when measured at 85° to meter and 20 to 35 when measured at 60°.
 - .5 **G5 – Semi-Gloss:** Medium sheen finish with a gloss range of 35 to 70 when measured at 60° to meter.
 - .6 **G6 – Gloss:** High sheen finish with a gloss range of 70 to 85 when measured at 60° to meter.
 - .7 **G7 – High Gloss:** Reflective sheen having a gloss range in excess of 85 when measured at 60° to meter.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Materials and resources in accordance with Section 01 35 43.
- .2 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .3 Provide paint materials for paint systems from single manufacturer.
- .4 Only qualified products with E2 "Environmentally Friendly" rating are acceptable for use on this project.
- .5 Conform to latest MPI requirements for interior painting work including preparation and priming.
- .6 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI architectural Painting Specification Manual "Approved Product" listing.
- .7 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.
- .8 Provide paint products meeting MPI "Environmentally Friendly" E2 ratings based on VOC (EPA Method 24) content levels.
- .9 Use MPI listed materials having minimum E2 rating where indoor air quality (odour) requirements exist.
- .10 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids:
 - .1 Water clean-up.
 - .2 Non-flammable biodegradable.
 - .3 Manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
 - .4 Manufactured without compounds which contribute to smog in the lower atmosphere.
 - .5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
 - .6 Primers: not to exceed VOC content of 200 g/L
Flat coatings (G1): not to exceed VOC content of 50 g/L

Non Flat coatings (G2-G5): not to exceed VOC content of 50 g/L.

- .11 Formulate and manufacture water-borne surface coatings with no aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .12 Flash point: 61.0 degrees C or greater for water-borne surface coatings and recycled water-borne surface coatings.
- .13 Ensure manufacture and process of both water-borne surface coatings and recycled water-borne surface coatings does not release:
 - .1 Matter in undiluted production plant effluent generating 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to natural watercourse or sewage treatment facility lacking secondary treatment.
 - .2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.
- .14 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes to meet minimum "Environmentally Friendly" E2 rating.
- .15 Recycled water-borne surface coatings to contain 50% post-consumer material by volume.
- .16 Recycled water-borne surface coatings must not contain:
 - .1 Lead in excess of 600.0 ppm weight/weight total solids.
 - .2 Mercury in excess of 50.0 ppm weight/weight total product.
 - .3 Cadmium in excess of 1.0 ppm weight/weight total product.
 - .4 Hexavalent chromium in excess of 3.0 ppm weight/weight total product.
 - .5 Organochlorines or polychlorinated biphenyls (PCBS) in excess of 1.0 ppm weight/weight total product.

2.2 COLOURS

- .1 For colours and gloss levels refer to drawings.
- .2 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. Obtain written

approval from the Departmental Representative for tinting of painting materials.

- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.
- .4 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 **GLOSS/SHEEN RATINGS**

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

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 - Matte Finish (flat)	Max. 5	Max. 10
Gloss Level 2 - Velvet-Like Finish	Max.10	10 to 35
Gloss Level 3 - Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 - Satin-Like Finish	20 to 35	min. 35
Gloss Level 5 - Traditional Semi-Gloss Finish	35 to 70	
Gloss Level 6 - Traditional Gloss	70 to 85	
Gloss Level 7 - High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated on Finish Schedule.

2.5 **INTERIOR PAINTING SYSTEMS**

- .1 Concrete vertical surfaces: including horizontal soffit:
 - .1 INT 3.1C - High performance architectural latex G3 finish. Not to exceed VOC content of 50 g/L.
 - .2 INT 3.1F - Epoxy (tile-like) finish for smooth concrete (at cell areas). Not to exceed VOC content of 250 g/L.
- .2 Concrete horizontal surfaces: floors and stairs:
 - .1 INT 3.2C - Epoxy finish. (at cell areas). Not to exceed VOC content of 250 g/L.
 - .2 INT 3.2E - Concrete stain finish. Not to exceed VOC content of 100 g/L.
 - .3 INT 3.2F - Concrete floor sealer. Refer to Section 07 92 10. Not to exceed

VOC content of 100 g/L.

- .3 Concrete masonry units: smooth and split face block and brick:
 - .1 INT 4.2X - Non-MPI System for clear coating Ground Face Terrazzo Concrete Block Specified in Section 04 81 00 - Unit Masonry Assemblies:
 - .1 Pro-Masonry Clear Sheen single coat, semi-gloss, Telephone (800) 628-8476. Not to exceed VOC content of 100 g/L.
 - .2 INT 4.2D - High performance architectural latex G3 finish. Not to exceed VOC content of 50 g/L.
 - .3 INT 4.2E - Institutional low odour/low VOC G3 finish. Not to exceed VOC content of 50 g/L.
 - .4 INT 4.2F - Epoxy (tile-like) finish for dry environments. Not to exceed VOC content of 250 g/L.
 - .5 INT 4.2G - Epoxy (tile-like) finish for wet environments. Not to exceed VOC content of 250 g/L.
- .4 Structural steel and metal fabrications: columns, beams, joists:
 - .1 INT 5.1CC - Waterborne dry wall finish (over quick dry shop primer) structural steel, unless noted otherwise.
 - .2 INT 5.1R - High performance architectural latex G5 finish. (metal fabrications)
 - .3 Antirust paint & primer: not to exceed VOC content of 250 g/L.
- .5 Steel - high heat: (boilers, furnaces, heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted):
 - .1 INT 5.2A - Heat resistant enamel finish, maximum 205degrees C. Not to exceed VOC content of 100 g/L.
 - .2 INT 5.2B - Heat resist ant aluminum paint finish, maximum 427degrees C. Not to exceed VOC content of 100 g/L.
 - .3 INT 5.2C - Inorganic zinc rich coating, maximum 400degrees C. Not to exceed VOC content of 100 g/L.
 - .4 INT 5.2D - High heat resistant coating, maximum 593degrees C. Not to exceed VOC content of 420 g/L.
- .6 Galvanized metal: doors, frames, railings, misc. steel, pipes, overhead decking, and ducts.
 - .1 INT 5.3K - Waterborne light industrial G5 coating (over waterborne primer). Not to exceed VOC content of 50 g/L.
 - .2 INT 5.3M - High performance architectural latex G5 finish.
 - .3 INT 5.3N - Institutional low odour/low VOC G5 finish.
- .7 Aluminum: unanodized:

- .1 INT 5.4G - Institutional low odour/low VOC G5 finish. Not to exceed VOC content of 50 g/L.
- .8 Copper:
 - .1 INT 5.5G - Institutional low odour/low VOC G3 finish.
- .9 Stainless steel: unpolished:
 - .1 INT 5.6G - High performance architectural latex G5 finish.
- .10 Dressed lumber: including doors, door and window frames, casings, mouldings:
 - .1 INT 6.3C - Semi-transparent stain finish do not use on doors. Not to exceed VOC content of 100 g/L.
 - .2 INT 6.3E - Polyurethane varnish finish (over stain). Not to exceed VOC content of 275 g/L.
 - .3 INT 6.3R - Pigmented fire retardant finish (ULC rated). Not to exceed VOC content of 150 g/L.
 - .4 INT 6.3S - Clear fire retardant finish (ULC rated). Not to exceed VOC content of 150 g/L.
 - .5 INT 6.3V - Institutional low odour/low VOC finish. Not to exceed VOC content of 50 g/L.
- .11 Wood paneling and casework: partitions, panels, shelving, millwork:
 - .1 INT 6.4N - Waterborne light industrial GS coating. Not to exceed VOC content of 50 g/L.
 - 2 INT 6.4V - Clear moisture cured polyurethane gloss finish (over stain). Not to exceed VOC content of 275 g/L.
- .12 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock type material", and textured finishes:
 - .1 INT 9.2B - High performance architectural latex G3 finish. Not to exceed VOC content of 50 g/L.
 - .2 INT 9.2M - Institutional low odour/low VOC G3 finish.
- .13 Canvas and cotton coverings.
 - .1 INT 10.1D - Institutional low odour/low VOC G3 finish. Not to exceed VOC content of 50 g/L.

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.

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 the Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 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 the Departmental Representative.
 - .2 Protect items that are permanently attached such as Fire Labels on doors and

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- 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 the Departmental 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 bleach where applicable 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 new wood surfaces before installation. Use same primers as specified for exposed surfaces.
 - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
 - .2 Apply wood filler to nail holes and cracks.

- .3 Tint filler to match stains for stained woodwork.
- .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, blowing with clean dry compressed air, vacuum cleaning.
- .8 Touch up of shop primers with primer as specified.
- .9 Do not apply paint until prepared surfaces have been accepted by the Departmental Representative.

3.5 APPLICATION

- .1 Method of application to be as approved by the Departmental Representative. Apply paint by brush, roller, air sprayer, airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and Roller Application:
 - .1 Apply paint in uniform layer using brush and/or roller type suitable for application.
 - .2 Work paint into cracks, crevices and corners.
 - .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
 - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
 - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 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.
- 4 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.
- 5 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .7 Sand and dust between coats to remove visible defects.
- .8 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.
- .9 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .10 Finish closets and alcoves as specified for adjoining rooms.
- .11 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

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 Boiler room, 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 Keep sprinkler heads free of paint.
- .7 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
- .8 Paint fire protection piping.
- .9 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .10 Paint natural gas piping yellow.
- .11 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.
- .12 Do not paint interior transformers and substation equipment.

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 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 the Departmental 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 the Departmental 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 the Departmental Representative.
- .6 Advise the Departmental 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 the Departmental Representative.

3.9 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 the Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean

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condition as approved by the Departmental Representative.

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