

Part 1 General

1.1 Related Sections

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 06 10 00 – Rough Carpentry.

1.2 References

- .1 Aluminum Association
 - .1 Designation for Aluminum Finishes-1997.
- .2 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM C36/C36M-01, Specification for Gypsum Wallboard.
 - .2 ASTM C475-01, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .3 ASTM C514-01, Specification for Nails for the Application of Gypsum Board.
 - .4 ASTM C630/C630M-01, Specification for Water-Resistant Gypsum Backing Board.
 - .5 ASTM C840-01, Specification for Application and Finishing of Gypsum Board.
 - .6 ASTM C954-00, Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
 - .7 ASTM C1047-99, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - .8 ASTM C1280-99, Specification for Application of Gypsum Sheathing Board.
 - .9 ASTM C1177-01, Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - .10 ASTM C1178/C1178M-01, Specification for Glass Mat Water-Resistant Gypsum Backing Board.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34-M86(R1988), 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.
- .4 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-1988(R2000), 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.

Part 2 Products

2.1 Materials

- .1 Standard board: to ASTM C1396/C1396M, CAN/CSA-A82.27, regular and Type X to thickness indicated, 1200 mm wide x maximum practical length, edges bevelled.
- .2 Water-resistant board: to ASTM C1396/C1396M regular and Type X, thickness as indicated, 1200mm wide x maximum practical length.
 - .1 Use in washrooms and other moisture prone areas. Typical.
- .3 Metal furring runners, hangers, tie wires, inserts, anchors: to ASTM C1280.
- .4 Suspended gypsum ceiling framing: U channels, furring channels, furring channel clips, hanger wire, tie wire – framed to ASTM C754.
- .5 Drywall furring channels: 0.5 mm (25ga.) core thickness galvanized steel channels for screw attachment of gypsum board.
- .6 Resilient drywall furring: 0.5 mm (25ga.) base steel thickness galvanized steel for resilient attachment of gypsum board.
 - .1 Double leg resilient channels for double layer gypsum ceilings. Verify load ratings.
- .7 Nails: to ASTM C514.
- .8 Steel drill screws: to ASTM C1002.
- .9 Stud adhesive: to CAN/CGSB-71.25 ASTM C557.
- .10 Laminating compound: as recommended by manufacturer, asbestos-free.
- .11 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, ABS, PVC, Zinc metal, zinc-coated by hot-dip process zinc-coated by electrolytic process aluminum coated phosphatized, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .12 Sealants: in accordance with Section 07 92 00 - Joint Sealing.
- .13 Acoustic sealant: 07 92 00 – Joint Sealing.
- .14 Firestop sealant: 07 84 00.

- .15 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .16 Insulating strip: rubberized, moisture resistant, 3 mm thick cork strip, 12 mm wide, with self sticking permanent adhesive on one face, lengths as required.
- .17 Joint compound: to ASTM C475, asbestos-free.

2.2 Finishes

- .1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.

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 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .5 Install Work level to tolerance of 1:1200.
- .6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.
- .7 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .8 Fur for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .9 Fur above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.
- .10 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.
- .11 Fur openings and around built-in equipment, cabinets, access panels as required by mechanical and other system/trades, window recesses, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .12 Fur duct shafts, beams, columns, pipes and exposed services where indicated.
- .13 Erect drywall resilient furring transversely across studs joists between the layers of gypsum board, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with 38 mm common nail 25 mm drywall screw.
- .14 Install 150 mm continuous strip of 13 mm gypsum board along base of partitions where resilient furring installed.

3.2 Application

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical Work are approved.
- .2 Apply single layer gypsum board to framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
 - .1 Single-Layer Application:
 - .1 Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C840.
 - .2 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
- .3 Apply water-resistant gypsum board adjacent to slop sinks, urinals, and washroom vanities. Apply water-resistant sealant to edges, ends, cut-outs which expose gypsum core and to fastener heads. Do not apply joint treatment on areas to receive tile finish.
- .4 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant. Install sealant according to Manufacturer's instructions.
- .5 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
- .6 Install gypsum board on walls vertically to avoid end-butt joints.
- .7 Install gypsum board with face side out.
- .8 Do not install damaged or damp boards.
- .9 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

3.3 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 using contact adhesive for full length.
- .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 two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .6 Provide continuous polyethylene dust barrier behind and across control joints.
- .7 Locate control joints where indicated at changes in substrate construction at approximate 10 m spacing on long corridor runs at approximate 15 m spacing on ceilings.

- .8 Install control joints straight and true.
- .9 Install cornice cap where gypsum board partitions do not extend to ceiling.
- .10 Fit cornice cap over partition, secure to partition track with two rows of sheet metal screws staggered at 300 mm on centre.
- .11 Splice corners and intersections together and secure to each member with 3 screws.
- .12 Install access doors to electrical and mechanical fixtures specified in respective sections.
 - .1 Rigidly secure frames to furring or framing systems.
- .13 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.
- .14 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 Levels of finish:
 - .1 Level 0: No taping, finishing or accessories required.
 - .1 Typical for temporary walls.
 - .2 Level 1: Embed tape for joints and interior angles in joint compound. Surfaces to be free of excess joint compound; tool marks and ridges are acceptable.
 - .1 Typical above ceilings.
 - .3 Level 2: Embed tape for joints and interior angles in joint compound and apply one separate coat of joint compound over joints, angles, fastener heads and accessories; surfaces free of excess joint compound; tool marks and ridges are acceptable.
 - .1 Typical for tile substrates.
 - .4 Level 3: Embed tape for joints and interior angles in joint compound and apply two separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
 - .1 Typical for heavily textured wall coverings.
 - .5 Level 4: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
 - .1 Typical for flat paint wall or ceiling surfaces.
 - .2 Typical for light textured wall coverings.
 - .6 Level 5: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; apply a thin skim coat of joint compound to entire surface; surfaces smooth and free of tool marks and ridges. Apply:
 - .1 Typical for high gloss wall or ceiling surfaces
 - .2 Typical where there is noticeable waviness or unevenness in the finished surface, including when illuminated by natural or artificial light.

- .15 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .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.
- .17 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .18 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
- .19 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.
- .20 Mix joint compound slightly thinner than for joint taping.
- .21 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.
- .22 Allow skim coat to dry completely.
- .23 Remove ridges by light sanding or wiping with damp cloth.
- .24 Provide protection that ensures gypsum drywall Work will remain without damage or deterioration at time of substantial completion.

3.4 ULC Schedules

- .1 Construct fire rated assemblies where indicated.
 - .1 1 hr. fire rated partition assembly, ULC Design No. W301 minimum requirement.
 - .1 1 hr. for Mechanical / Electrical Room M05.
 - .2 Read in conjunction with Wall Assembly Types.

3.5 Fire Rated Assembly

- .1 Achieve integrity of rating requirement of rated assemblies. Gypsum shall extend tight to top and bottom of hollowcore planking.
 - .1 Service rooms with gas fired appliances.
- .2 Firestop any gaps or allow space for firestop material according to fire stopping criteria.
 - .1 See Section 07 84 00 - Fire Stopping.

3.6 Gypsum Finish Schedule

- .1 Apply gypsum at openings as indicated to ULC standards and requirements.
- .2 Spacing between gypsum and other materials, piping, ducts, masonry, ceiling, floor, etc., shall be to ULC firestop requirements.
 - .1 Ducts passing through rated wall, floor and roof assemblies.
 - .2 Duct shaft, exhaust shaft, plumbing shafts as noted.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C645-00, Specification for Nonstructural Steel Framing Members.
 - .2 ASTM C754-00, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-1.40-97, Primer, Structural Steel, Oil Alkyd Type.
- .3 Environmental Choice Program (ECP).
 - .1 CCD-047a -98, Paints - Surface Coatings.
 - .2 CCD-048-98, Surface Coatings - Recycled Water-borne.

1.2 QUALITY ASSURANCE

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

Part 2 Products

2.1 MATERIALS

- .1 Non-load bearing channel stud framing: to ASTM C645, to sizes indicated, roll formed from hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at 460 mm on centres.
 - .1 Use 20 ga. (0.9mm) steel studs for areas with abuse-resistant gypsum. See Section 09 21 16 – Gypsum Board Assemblies.
- .2 Floor and ceiling tracks: to ASTM C645, in widths to suit stud sizes, 32 mm flange height.
- .3 Metal channel stiffener: 38 x 13 mm size, 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.
- .4 Acoustical sealant: to ASTM C919. See Section 07 92 00 – Joint Sealants.
- .5 Insulating strip: rubberized, moisture resistant 3 mm thick foam strip, 12 mm wide, with self sticking adhesive on one face, lengths as required.

Part 3 Execution

3.1 ERECTION

- .1 Align partition tracks at floor and ceiling and secure at 600 mm on centre maximum.
- .2 Install damp proof course under stud shoe tracks of partitions on slabs on grade.
- .3 Place studs vertically at 406 mm on centre and not more than 50 mm 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 bottom and ceiling tracks using screws.
- .6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for Work specified in other Sections.
- .8 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
- .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 sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .12 Provide 40 mm stud or furring channel secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.
- .13 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .14 Extend partitions to ceiling height except where noted otherwise on drawings.
- .15 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use 50 mm leg ceiling tracks.
- .16 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .17 Install two continuous beads of acoustical sealant under studs and tracks around perimeter of sound control partitions.

3.2 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

Part 1 General

1.1 Related Sections

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 09 65 19 – Tile Flooring.

1.2 References

- .1 American Society for Testing and Materials (ASTM International)
 - .1 ASTM F1303-99, Specification for Sheet Vinyl Floor Covering with Backing.
- .2 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-ISO 14040-97, Environmental Management - Life Cycle Assessment - Principles and Framework (Adopted ISO 14040:1997, first edition).

1.3 Samples

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit duplicate 300 x 300 mm sample pieces of sheet material, 300 mm long base, edge strips.

1.4 Closeout Submittals

- .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 Extra Materials

- .1 Provide extra materials of resilient sheet flooring and adhesives in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide 2 m² of each colour, pattern and type flooring material required for project for maintenance use.
- .3 Extra materials to be in one piece and from same production run as installed materials.
- .4 Clearly identify each roll of sheet flooring and each container of adhesive.
- .5 Deliver to Contract Administrator , upon completion of the Work of this section.
- .6 Store where directed by Contract Administrator .

1.6 Environmental Requirements

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

Part 2 Products

2.1 Materials

- .1 Sheet vinyl with backing: to ASTM F1913, commercial.
 - .1 Acceptable materials: Johnsonite Tarkett, Granit, or approved equal in accordance with B7.
 - .2 Type 2.
 - .3 Construction: unbacked, non layered, homogeneous vinyl composition of polyvinyl chloride resin, plasticizers, stabilizers, fillers and pigments.
 - .4 Finish: UV-cured polyurethane.
 - .5 Pattern: Allow for 3 patterns to be used throughout project.
 - .6 Colour: to be selected by Contract Administrator .
 - .7 Thickness: 2 mm.
- .2 Primers and adhesives: of types recommended by resilient flooring manufacturer for specific material on applicable substrate, above, on or below grade.
- .3 Sub-floor filler and leveller: white premix latex requiring water only to produce cementitious paste 2 part latex-type filler requiring no water as recommended by flooring manufacturer for use with their product.
- .4 Metal edge strips:
 - .1 Aluminum extruded, smooth, mill finish polished stainless steel with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.
- .5 External corner protectors: stainless steel, type recommended by flooring manufacturer.
- .6 Edging to floor penetrations: stainless steel aluminum, type recommended by flooring manufacturer.
- .7 Accessories: fillet strip and cove cap to match colour of flooring in cove base situations.
- .8 Sealer and wax: type recommended by resilient flooring material manufacturer for material type and location.

Part 3 Execution

3.1 Site Verification of Conditions

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

3.2 Preparation

- .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.
- .3 Prime Seal concrete slab to resilient flooring manufacturer's printed instructions.

3.3 Application: Flooring

- .1 Provide a high ventilation rate, with maximum outside air, during installation, and for 48 to 72 hours after installation. If possible, vent directly to the outside. Do not let contaminated air recirculate through a district or whole building air distribution system. Maintain extra ventilation for at least one month following building occupation.
- .2 To minimize emissions from adhesives, use water-based, solvent-free styrene-butadiene-rubber adhesive for linoleum. Butadiene exposure may cause eye and nose irritation, headaches, dizziness, and vomiting.
- .3 Apply low VOC water based adhesive uniformly using recommended trowel. Do not spread more adhesive than can be covered by flooring before initial set takes place.
- .4 Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.
- .5 Run sheets in direction of traffic. Double cut sheet joints and continuously seal heat weld according to manufacturer's printed instructions.
- .6 Heat weld seams of sheet flooring in accordance with manufacturer's printed instructions.
- .7 As installation progresses, and after installation roll flooring with 45 kg minimum roller to ensure full adhesion.
- .8 Cut flooring neatly around fixed objects.
- .9 Install feature strips and floor markings where indicated. Fit joints tightly.
- .10 Install flooring in pan type floor access covers. Maintain floor pattern.
- .11 Continue flooring over areas which will be under built-in furniture.
- .12 Continue flooring through areas to receive movable type partitions without interrupting floor pattern.
- .13 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar.
- .14 Install metal edge strips at unprotected or exposed edges where flooring terminates.
- .15 Heat weld base in accordance with manufacturer's printed instructions.

3.4 Seamless Welded Floor Cove/base

- .1 Provide a seamless welded base. Follow manufacturer instructions and standards in providing the seamless cove.

3.5 Cleaning

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

3.6 Protection

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

3.7 **Schedules**

- .1 See Room Finish Schedule.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM F1066-04, Standard Specification for Vinyl Composition Floor Tile.
 - .2 ASTM F1344-04, Standard Specification for Rubber Floor Tile.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-25.20-95, Surface Sealer for Floors.
 - .2 CAN/CGSB-25.21-95, Detergent-Resistant Floor Polish.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 South Coast Air Quality Management District (SCAQMD), California State
 - .1 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.

1.2 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide product data in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Closeout Submittals:
 - .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.3 DELIVERY, STORAGE AND HANDLING

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

1.4 ENVIRONMENTAL REQUIREMENTS

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

1.5 MAINTENANCE

- .1 Extra Materials:
 - .1 Provide maintenance materials of resilient tile flooring, base and adhesive in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Provide 2 m² of each colour, pattern and type flooring material required for this project for maintenance use.
 - .3 Extra materials from same production run as installed materials.
 - .4 Identify each container of floor tile and each container of adhesive.
 - .5 Deliver to Contract Administrator, upon completion of the Work of this section.

- .6 Store where directed by Contract Administrator.

Part 2 Products

2.1 VINYL COMPOSITION TILE

- .1 Description:
 - .1 Johnsonite Azrock VCT Tile, or approved equivalent in accordance with B7 Substitutes.
 - .2 Colour: 4 colours selected from manufacturer's standard colour range.
 - .3 Nominal total thickness: 3.2mm.
 - .4 Size: 305 mm x 305mm
 - .5 Tile shall conform to the size, squareness, thickness, indentation, impact, deflection, resistance to chemicals and resistance to heat requirements of ASTM F 1066, Class 2 – through pattern.
- .2 Adhesive: Low VOC
 - .1 Provide Johnsonite resilient tile adhesive of type recommended by manufacturer.

2.2 SKATE FLOORING

- .1 Description: Skate-and-spike resistant Johnsonite Triumph Rubber Skate Flooring, or approved equivalent in accordance with B7 Substitutes. Designed specifically for weight rooms, ice rinks and other high impact applications.
 - .1 Construction:
 - .1 Manufactured of dual durometer layers composed of 100% synthetic and natural rubber, high quality additives, and colorants to meet ASTM F-1344, Standard Specification for Rubber Floor Tile.
 - .2 Two-ply vulcanized construction consists of high-resiliency rubber wear layer on elastic cushioned performance layer.
 - .2 Colours: Speckled Colorways and Solid Colors. Allow for 4 colours from manufacturer's full colour range.
 - .3 Surface texture: Hammered.
 - .4 Square Edge Tile: 610mm x 610mm from edge edge, wear layer thickness of 2.3 mm.
- .2 Performance:
 - .1 Abrasion Resistance: ASTM D 3389 – less than 1 gram weight loss.
 - .2 Acoustical: ASTM E 492 (Impact Insulation Class) - 46 IIC.
 - .3 Slip Resistance: ASTM D 2047 – Meets or Exceeds a static coefficient of friction of 0.8
 - .4 Basketball Recovery: DIN18032–99%.
 - .5 Static Load Limit: ASTM F 970 – Passes at 250 PSI.
 - .6 FireResistance:
 - .1 ASTM E 648/NFPA 253 (Critical Radiant Flux) Class 1.

- .2 ASTME662/NFPA258 (SmokeDensity), less than 450.
- .7 Chemical Resistance: ASTM F925 – Passes.
 - .1 5% Acetic Acid, 70% Isopropyl Alcohol, 5% Sodium Hydroxide, 5% Hydrochloric Acid, 5% Ammonia, Bleach, 5% Phenol, and Sulfuric Acid.

2.3 RESILIENT WALL BASE

- .1 Johnsonite Traditional Rubber Base or approved equivalent in accordance with B7 Substitutes.
 - .1 Complies with ASTM F-1861 Type TS (Thermoset Vulcanized Rubber), Group 1 (Solid)
 - .2 Thickness: 3.175 mm nominal
 - .3 Colours: 6 colours selected from manufacturer's standard range.
 - .4 Profile: Standard Toe (Cove base)
 - .1 Nominal Height 100mm
 - .2 Install in longest practicable lengths. Joints minimum 1000mm from end of wall.
 - .3 Corners: Formed by installer on site.
- .2 Performance
 - .1 Thickness tolerance: Complies with ASTM F-386 2.
 - .2 Flexibility: Complies with ASTM F-137 3.
 - .3 Resistance to Heat Aging: Complies with ASTM F-1515 4.
 - .4 Resistance to Detergents: Complies with ASTM F-925 5.
 - .5 Resistance to Alkalis: No fading or softening
 - .6 Dimensional Stability: Complies with ASTM F 1861
 - .7 Squareness: 90 degrees +/- 0.5 degrees
 - .8 Does not contain any of the hazardous chemicals listed in California Proposition 65 9. Collaborative for High Performance Schools (CHPS) 01350 Low-Emitting Material Criteria: Pass

2.4 ACCESSORIES

- .1 Sub-floor filler and leveller: where needed. To manufacturer's requirements.
- .2 Sealer: to CAN/CGSB-25.20, Type 2-water based type recommended by flooring manufacturer.
 - .1 Adhesive: Low VOC
- .3 Wax: to CAN/CGSB-25.21 type recommended by flooring manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Installation in strict compliance with manufacturer's written recommendations and specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSPECTION

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

3.3 SUB-FLOOR TREATMENT

- .1 Remove existing resilient flooring.
- .2 Remove or treat old adhesives to prevent residual, old flooring adhesives from bleeding through to new flooring and/or interfering with the bonding of new adhesives.
- .3 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.
- .4 Prime and Seal concrete to flooring manufacturer's printed instructions.

3.4 TILE APPLICATION

- .1 Provide high ventilation rate, with maximum outside air, during installation, and for 48 to 72 hours after installation. If possible, vent directly to outside. Do not let contaminated air recirculate through district or whole building air distribution system. Maintain extra ventilation for at least one month following building occupation.
- .2 Apply adhesive uniformly using recommended trowel in accordance with flooring manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place.
- .3 Lay flooring with joints parallel to building lines to produce symmetrical tile pattern. Border tiles minimum half tile width.
- .4 Install flooring to square grid pattern with joints aligned.
- .5 As installation progresses, and after installation, roll flooring in 2 directions with 45 kg minimum roller to ensure full adhesion.
- .6 Cut tile and fit neatly around fixed objects.
- .7 Install feature strips and floor markings where indicated. Fit joints tightly.
- .8 Install flooring in pan type floor access covers. Maintain floor pattern.
- .9 Continue flooring through areas to receive movable type partitions without interrupting floor pattern.
- .10 Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.
- .11 Install metal edge strips at unprotected or exposed edges where flooring terminates.

3.5 BASE APPLICATION

- .1 Lay out base to keep number of joints at minimum. Base joints at maximum length available or at internal or premoulded corners.
- .2 Clean substrate and prime with one coat of adhesive.
- .3 Apply adhesive to back of base.
- .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
- .5 Install straight and level to variation of 1:1000.
- .6 Scribe and fit to door frames and other obstructions. Use 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, minimum 300 mm each leg. Wrap around toeless base at external corners.
- .8 Install toeless type base before installation of carpet on floors.

3.6 FIELD QUALITY CONTROL

- .1 Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.7 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Remove excess adhesive from floor, base and wall surfaces without damage.
- .3 Clean, seal and wax floor and base surface to flooring manufacturer's instructions. In carpeted areas clean, seal and wax base surface before carpet installation.

3.8 PROTECTION

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

3.9 SCHEDULE

- .1 See Room Finish Schedule.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Section Includes material and installation of site applied paint finishes to new 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, 2004.
- .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:
 - .1 Contractor: minimum of five years proven satisfactory experience. Provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.
 - .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 - Quality Control.
 - .1 Provide 300 mm x 300 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 indicated by Contract Administrator.
 - .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 Pre-Installation Meeting:
- .1 Convene pre-installation meeting one week prior to beginning Work of this Section and on-site installations in accordance with Section 01 32 16.06 - Construction Progress Schedule - Critical Path Method (CPM) Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .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 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 and 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 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 the following:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour numbers.
 - .4 MPI Environmentally Friendly classification system rating.

1.5 MAINTENANCE

- .1 Extra Materials:
 - .1 Deliver to site 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 and finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
 - .3 Delivery, storage and protection: comply with Contract Administrator requirements for delivery and storage of extra materials.

1.6 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.

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- .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.
 - .9 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.
 - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard and wood packaging material in appropriate on-site bins for recycling in accordance with specifications.
 - .4 Separate for reuse and recycling and place in designated containers Steel, Metal, Plastic and wood waste in accordance with Waste Management Plan (WMP).
 - .5 Place materials defined as hazardous or toxic in designated containers.
 - .6 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal, regulations.
 - .7 Ensure emptied containers are sealed and stored safely.
 - .8 Unused paint and coating materials must be disposed of at official hazardous material collections site as approved by Contract Administrator.
 - .9 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.
 - .10 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
 - .11 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

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

1.7 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Ventilate enclosed spaces.
 - .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 continuous ventilation for seven days after completion of application of paint.
 - .4 Coordinate use of existing ventilation system with Contract Administrator and ensure its operation during and after application of paint as required.
 - .5 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.
 - .6 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 Paint Inspection Agency Authority 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 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.

Part 2 Products

2.1 GENERAL

- .1 Architectural paints, coatings and primers applied to interior walls and ceilings to Green Seal Standard GS-11, latest edition:
 - .1 Flat Paints and Coatings: VOC not more than 50 g/L.
 - .2 Non-Flat Paints and Coatings: VOC not more than 150 g/L.
- .2 Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates to Green Seal Standard GS-03, latest edition:
 - .1 Anti-Corrosive Coatings: VOC not more than 250 g/L.
- .3 Clear wood finishes, floor coatings, stains and shellacs applied to interior elements to SCAQMD Rule 1113, latest edition:
 - .1 Clear wood finishes: varnish & lacquers: VOC not more than 275 g/L.
 - .2 Floor coatings: VOC not more than 50 g/L.
 - .3 Sealers:
 - .1 Waterproofing sealers, VOC not more than 100 g/L.

- .2 Sanding sealers, VOC not more than 275 g/L.
- .3 Other sealers, VOC not more than 100 g/L.
- .4 Shellacs:
 - .1 Clear: VOC not more than 730 g/L.
 - .2 Pigmented: VOC not more than 550 g/L.
- .5 Stains: VOC not more than 100 g/L.
- .4 Aromatic Compounds: paints and coatings not to contain more than 1.0% by weight total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
- .5 Restricted Components: paints and coatings not to contain the following:
 - .1 Acrolein.
 - .2 Acrylonitrile.
 - .3 Antimony.
 - .4 Benzene.
 - .5 Butyl benzyl phthalate.
 - .6 Cadmium.
 - .7 Di (2-ethylhexyl) phthalate.
 - .8 Di-n-butyl phthalate.
 - .9 Di-n-octyl phthalate
 - .10 1,2-dichlorobenzene.
 - .11 Diethyl phthalate.
 - .12 Dimethyl phthalate.
 - .13 Ethylbenzene.
 - .14 Formaldehyde.
 - .15 Hexavalent chromium.
 - .16 Isophorone.
 - .17 Lead.
 - .18 Mercury.
 - .19 Methyl ethyl ketone.
 - .20 Methyl isobutyl ketone.
 - .21 Methylene chloride.
 - .22 Naphthalene.
 - .23 Toluene (methylbenzene).
 - .24 1,1,1-trichloroethane.
 - .25 Vinyl chloride.

2.2 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 Conform to latest MPI requirements for interior painting Work including preparation and priming.
- .4 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.
- .5 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.
- .6 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids:
 - .1 Water-based, Water soluble, 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.
- .7 Formulate and manufacture water-borne surface coatings with no aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .8 Flash point: 61.0 degrees C or greater for water-borne surface coatings and recycled water-borne surface coatings.
- .9 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 15mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.
- .10 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.

2.3 COLOURS

- .1 Contract Administrator will provide Colour Schedule after Contract award.

- .2 Colour schedule will be based upon selection of eight base and accent colours. No more than eight colours will be selected for entire project and no more than four colours will be selected in each area.
- .3 Selection of colours from manufacturers full range of colours.
- .4 Where specific products are available in restricted range of colours, selection based on limited range.
- .5 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

2.4 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. Obtain written approval from Contract Administrator 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.

2.5 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 and as noted on Finish Schedule.

2.6 INTERIOR PAINTING AND SYSTEMS

- .1 Vertical Concrete: New basement concrete exterior walls – not painted.
- .2 Concrete masonry units: Repainting of concrete masonry.
 - .1 RINT / INT 4.2E - Institutional low odour / VOC.
 - .1 Gloss level 5
 - .2 Custom grade.
 - .3 Coat #1: MPI # 4 – Block Filler, Latex, Interior/Exterior. VOC ≤ 100g/l.
 - .4 Coat #2: MPI # 147 – Latex, Interior, Institutional Low Odor/VOC, Semi Gloss (MPI Gloss Level 5). VOC ≤ 10g/l.

- .3 Structural steel & metal fabrications: Columns, Beams, Joists, Misc. metals, etc.
 - .1 INT 5.1S – Institutional low odour / VOC.
 - .1 Gloss level 3.
 - .2 Custom grade.
 - .3 SSPC – SP-7 surface preparation. Shop applied.
 - .4 Coat #1: MPI #107 – Primer, Rust-Inhibitive, Water Based. VOC ≤ 100g/l. Shop applied by steel supplier / fabricator.
 - .5 Coat #2: MPI #145 – Latex, Interior, Institutional Low Odour/VOC (MPI Gloss Level 3). VOC ≤ 10g/l.
- .4 Metal doors, frames, railings, misc. steel, etc.
 - .1 Coordinate primer coat to door manufacturer. See Section 08 11 00 – Metal Doors and Frames.
 - .2 INT 5.3N – Institutional low odour / VOC.
 - .1 Gloss level 5.
 - .2 Premium grade.
 - .3 Galvanized metal: MPI # 25 – Cleaner, Etching, for Galvanized Metal. VOC ≤ 50 g/l. Shop applied.
 - .4 Coat #1: MPI #134 – Primer, galvanized, water based. VOC ≤ 100 g/l. Shop applied by supplier / fabricator. Coordinate to 08 11 00 – Metal Doors and Frames.
 - .5 Coats #2 & 3: MPI # 147 – Latex, Interior, Institutional Low Odor/VOC, Semi Gloss (MPI Gloss Level 5). VOC ≤ 10g/l.
- .5 Wood paneling and casework: MDF wall panels.
 - .1 INT 6.4T – Institutional low odour / VOC.
 - .1 Gloss level 4.
 - .2 Custom grade.
 - .3 Coat #1: MPI #39 – Primer, Latex, for Interior Wood. VOC ≤ 100 g/l.
 - .4 Coat #2: MPI#146 – Latex, Interior, Institutional Low Odour/VOC, (MPI Gloss Level 4). VOC ≤ 10 g/l.
 - .2 Varnish / Clear-Coat applications: (Select MDF panels and Ceiling Trellis.)
 - .1 Three coats MPI #128 – Varnish, Clear, Water-based, Satin.
 - .2 VOC ≤ 200 g/l.
- .6 Plaster and gypsum board: (Gypsum.)
 - .1 INT 9.2M – Institutional low odour / VOC.
 - .1 Gloss level 3.
 - .2 Premium grade.
 - .3 Coat #1: MPI # 50 – Primer Sealer, Latex, Interior. VOC ≤ 100 g/l.
 - .4 Coat #2 & 3: MPI # 145 – Latex, Interior, Institutional Low Odour/VOC (MPI Gloss Level 3). VOC ≤ 10g/l.

2.7 EXTERIOR PAINTING SYSTEMS

- .1 Exterior Galvanized Metal Fabrications: Not to be painted.
- .2 Exterior metal cladding to be factory pre-painted / finished.
- .3 Exterior metal doors and frames:
 - .1 Coordinate primer coat to door manufacturer. See Section 08 11 00 – Metal Doors and Frames.
 - .2 EXT 5.3L – Polyurethane pigmented over epoxy primer.
 - .1 Premium grade.
 - .2 Preparation and prime by door manufacturer.
 - .3 Coat #1: MPI # 101 – Primer, Epoxy, Anti-Corrosive, for Metal. VOC ≤ 300 g/l.
 - .4 Coat #2 & 3: MPI # 72 – Polyurethane, Two-Component, Pigmented, Gloss. VOC ≤ 300g/l.

2.8 SOURCE QUALITY CONTROL

- .1 Perform following tests on each batch of consolidated post-consumer material before surface coating is reformulated and canned. Testing by laboratory or facility which has been accredited by Standards Council of Canada.
 - .1 Lead, cadmium and chromium are to be determined using ICP-AES (Inductively Coupled Plasma - Atomic Emission Spectroscopy) technique no. 6010 as defined in EPA SW-846.
 - .2 Mercury is to be determined by Cold Vapour Atomic Absorption Spectroscopy using Technique no. 7471 as defined in EPA SW-846.
 - .3 Organochlorines and PCBs are to be determined by Gas Chromatography using Technique no. 8081 as defined in EPA SW-846.

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 Contract Administrator 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 Contract Administrator.
 - .2 Protect items that are permanently attached, such as Fire Labels on doors and frames.
 - .3 Protect factory finished products and equipment.
 - .4 Protect 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 Contract Administrator.
- .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, or vacuum cleaning.
- .8 Touch up shop primers with primer as specified.
- .9 Do not apply paint until prepared surfaces have been accepted by Contract Administrator.

3.5 APPLICATION

- .1 Method of application to be as approved by Contract Administrator.
- .2 Apply paint by brush, roller, air sprayer or airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .3 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.
- .4 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.
- .5 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.
- .6 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .7 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .8 Sand and dust between coats to remove visible defects.
- .9 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.
- .10 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, leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .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 disconnect switches for fire alarm system and exit light systems in red enamel.
- .7 Paint natural gas piping yellow.
- .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 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 Contract Administrator and 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 Contract Administrator.
- .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 Contract Administrator.
- .6 Advise Contract Administrator 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 Contract Administrator.

3.9 RESTORATION

- .1 Clean and re-install hardware items removed before undertaking 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 Contract Administrator. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Contract Administrator.

Weston Memorial Community Centre
Renovation Project
1625 Logan Ave, Winnipeg, MB.
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INTERIOR PAINTING

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END OF SECTION

WESTON COMMUNITY CENTRE RENOVATION - 14-004

Winnipeg, Manitoba

ROOM FINISH SCHEDULE

ROOM NO.	NAME	FLOOR	BASE	WALLS	FINISH	CEILING	FINISH	HEIGHT	REMARKS
M01	ENTRANCE VESTIBULE	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		Georgian Wire Glass in window betw
M02	CORRIDOR	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M03	CLOSET	CONC. HARD.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M04	GALLERY	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M05	MECHANICAL	CONC. HARD.	R.B.	BLOCK / GYP.	PAINT	EXPOSED	PAINT		
M06	CANTEEN	SHEET	COVE	BLOCK / GYP.	PAINT	GYP.	PAINT		
M07	PANTRY	SHEET	COVE	BLOCK	PAINT	GYP.	PAINT		
M08	KITCHEN	SHEET	COVE	BLOCK	PAINT	GYP.	PAINT		
M09	GYMNASIUM	EXIST.	EXIST.	EXISTING	EXIST.	EXIST.	EXIST.		Gym to remain as is - see separate prices for flooring
M10	BAR	SHEET	COVE	BLOCK	PAINT	GYP.	PAINT		
M11	MEN'S WASHROOM	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M12	CORRIDOR	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M13	WASHROOM	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M14	WOMEN'S WASHROOM	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M15	BINGO STORAGE	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M16	CLOSET	V.C.T.	R.B.	BLOCK	PAINT	GYP.	PAINT		
M17	GYM STORAGE	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M18	VESTIBULE	SKATE	R.B.	BLOCK	PAINT	GYP.	PAINT		
M19	CORRIDOR	SKATE	R.B.	BLOCK	PAINT	GYP.	PAINT		
M20	CIRCULATION HUB	SKATE	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M21	OFFICE	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M22	STORAGE	V.C.T.	R.B.	BLOCK	PAINT	GYP.	PAINT		
M23	ELECTRICAL	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M24	MULTI-PURPOSE	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M25	MPR #1	V.C.T.	R.B.	BLOCK / GYP.	PAINT	WOOD	EXIST.		See separate prices for acoustic panel 4'0" tall x 8'0" wide for entire perimeter.
M26	COMPUTER ROOM	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M27	MPR #3	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M28	MPR #2	V.C.T.	R.B.	BLOCK / GYP.	PAINT	GYP.	PAINT		
M29	STORAGE	V.C.T.	R.B.	BLOCK	PAINT	GYP.	PAINT		
M30	UNIVERSAL WASH.	SHEET	COVE	BLOCK	PAINT	GYP.	PAINT		
M31	STORAGE	V.C.T.	R.B.	BLOCK	PAINT	GYP.	PAINT		
M32	STORAGE ROOM	V.C.T.	R.B.	BLOCK	PAINT	GYP.	PAINT		
M33	SAFE ROOM	V.C.T.	R.B.	GYP SUM	PAINT	GYP.	PAINT		Reinforce walls

WESTON COMMUNITY CENTRE RENOVATION - 14-004

Winnipeg, Manitoba

ROOM FINISH SCHEDULE

ROOM NO.	NAME	FLOOR	BASE	WALLS	FINISH	CEILING	FINISH	HEIGHT	REMARKS
M34	NEW EXIT	V.C.T.	R.B.	BLOCK	PAINT	GYP.	PAINT		

NOTE: PAINT ALL DOORS AND FRAMES AS INDICATED ON THE DOOR & FRAME SCHEDULE AND SPECIFICATIONS

NOTE: ALL CEILING HEIGHTS ARE GIVEN RELATIVE TO FINISHED FLOOR (100 000)

NOTE: R.B. - RUBBER BASE

GYP. - GYPSUM

T BAR - CEILING TILE

EXPOSED - EXPOSED HOLLOWCORE

BLOCK - CONCRETE BLOCK

RUBBER - RUBBER TILE

SKATE - SKATE FLOORING

SPORT - GYM FLOORING

V.C.T. - VINYL COMPOSITE TILE

CONC. TOP - CONCRETE TOP

C.T. - CERAMIC TILE

SHEET - SHEET VINYL

COVE - SEAMLESS COVE BASE

WOOD - WOOD CEILING

NOTE: EXISTING STAIR AND MEZZANINE FINISHES ARE TO
REMAIN AS IS - PATCH AND REPAIR AS REQUIRED FOR
EXTENT OF RENOVATION WORK - TYPICAL.