

## LEGEND

<b>Ceiling Materials and Finish</b> AT1 Acoustic Tile, 2 x 4 GWB Gypsum Wall Board MGW Moisture Resistant GWB	<b>Wall Finish</b> PT Paint (Types PT1, PT2, etc.) Refer to Spec Section 09911 for complete listing of paint types CT Ceramic Tile, Porcelain Tile (Types CT1,CT2,etc.) WP Wood Panels
<b>Floor Materials and Finish</b> CONC Concrete CONC(h) Chemically Hardened Concrete CT Hard Tile (Types CT-1, CT-2, etc.) CPT Carpet Tile L Linoleum V Vinyl Stair Tread	<b>Wall Materials</b> CB Concrete Block TC Troweled Concrete GWB Gypsum Wall Board
<b>Base</b> CT Porcelain Base (TypesCT1,CT2,etc.) R Rubber Base	<b>Schedule Notes</b> 1. Sloped ceiling. 2. See plans for areas of floor finish. 3. CT3 in shower cubicle only. 4. PT6 on floor. 5. Make good all GWB painting and patching For areas renovated for Mechanical & Electrical work.

Room #	ROOM NAME	FLOOR FINISH		WALL FINISH		CEILING FINISH			SCHEDULE NOTES
		FIN	BASE	MAT.	FIN.	MAT.	FIN.	HT.	
Level 1									
C117	VESTIBULE	CT	CT	GWB	PT	GWB	-	8'-0"	REPAIRS TO FLOOR, WALLS AND CEILING AS REQUIRED
CC112	CORRIDOR	-	-	GWB	PT	-	-	-	
CC113	CORRIDOR	L	R	GWB	PT	-	-	-	REPAIRS TO FLOOR, WALLS AND CEILING AS REQUIRED
CC116	ELEVATOR	CT	CT	-	-	-	-	-	
CC114	ELEVATOR MACHINE ROOM	PT	R	GWB	PT	GWB	PT	8'-0"	
Level 2									
11	STAIR NO 11	-	-	-	PT	GWB	PT	-	REPAIRS TO WALL AND CEILING
CC214	SWING SPACE	L	R	GWB	PT	GWB	PT	-	NEW FINISHES IN ROOM. TOUCH UP GWB FINISH.
CC206	OFFICE	L	R	GWB	PT	GWB	PT	-	GYPSUM TOUCH UPS
	CORRIDOR	-	-	GWB	PT	-	-	-	REPAIRS TO WALL, FLOOR AND CEILING AT REMOVED WALL
13R	STAIR 13R	-	-	GWB	PT	-	-	-	ADDED GYPSUM WALL BOARD TO ACHIEVE FIRE RATING
Level 3									
	ELEVATOR LOBBY	L	R	GWB	PT	GWB	PT	-	
CC315	STAIR NO 11	L	R	GWB	PT	GWB	PT	-	CONCRETE TOPPING ON STAIR TREADS
	ADMIN / PHOTOCOPY	-	R	GWB	PT	GWB	PT	-	
CC309	OIC OFFICE	L	R	GWB	PT	GWB	PT	-	
CC301	MEETING ROOM / TRAINING RM	L	R	GWB	PT	GWB	PT	-	
CC302	OPERATIONS AREA	L	R	GWB	PT	GWB	PT	-	
13R	STAIR 13R	-	-	-	-	-	PT	-	TOUCH UP GYPSUM WALL BOARD

Room #	ROOM NAME	FLOOR FINISH		WALL FINISH		CEILING FINISH			SCHEDULE NOTES
		FIN	BASE	MAT.	FIN.	MAT.	FIN.	HT.	
CC314	LOCKERS	L	R	GWB	PT	GWB	PT	-	
CC304	KITCHEN	L	R	GWB	PT	GWB	PT	-	
CC300	CORRIDOR	L	R	GWB	PT	GWB	PT	-	
CC340	BARRIER FREE WASHROOM / SHOWER	CT	CT	GWB	CT, PT	MGW	PT	-	
	SHOWER			MGW	CT-3, PT	MGW	PT	7'-6"	
CC316	BARRIER FREE WASHROOM	CT	CT	GWB	CT, PT	MGW	PT	-	

## PART 1 - GENERAL

<u>1.1 RELATED SECTIONS</u>	.1	Section 09 22 16 - Non-Structural Metal Framing.
	.2	Section 09 91 23 - Interior Painting.
<u>1.2 REFERENCES</u>	.1	American Society for Testing and Materials International, (ASTM)
	.1	ASTM C 36/C36M-03e1, Specification for Gypsum Wallboard.
	.2	ASTM C 79/C79M-04a, Standard Specification for Treated Core and Non-treated Core Gypsum Sheathing Board.
	.3	ASTM C 442/C442M-04e1, Specification for Gypsum Backing Board, Gypsum Coreboard, and Gypsum Shaftliner Board.
	.4	ASTM C 475/C475M-12, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
	.5	ASTM C 630/C630M-03e1, Specification for Water-Resistant Gypsum Backing Board.
	.6	ASTM C 840-11, Specification for Application and Finishing of Gypsum Board.
	.7	ASTM C 954-11, 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.
	.8	ASTM C 1002-07, Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
	.9	ASTM C1177/C1177M-08, Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
	.10	ASTM C1178/C1178M-08, Specification for Glass Mat Water-Resistant Gypsum Backing Board.
	.11	ASTM C 1280-13, Specification for Application of Gypsum Sheathing Board.
	.12	ASTM C1396/C1396M-13, Standard Specification for Gypsum Board.
	.13	ASTM/ANSI A-118.10 For Load Bearing, Bonded, Waterproof Membranes for Thinset Ceramic Tile Installation.
	.2	Association of the Wall and Ceilings Industries International (AWEI)

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| 1.2 REFERENCES<br>(Cont'd)                | .3 | Underwriters' Laboratories of Canada (ULC)<br>.1 CAN/ULC-S102-10, Surface Burning Characteristics of Building Materials and Assemblies.   |
| 1.3 DELIVERY,<br>STORAGE AND<br>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<br>ENVIRONMENTAL<br>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.  |
|   | .3 | Ventilation: Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.                               |
| 1.5 WASTE<br>MANAGEMENT AND<br>DISPOSAL   | .1 | Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management System.   |
|   | .2 | Remove from site and dispose of packaging materials at appropriate recycling facilities.  |
|   | .3 | Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material for recycling in accordance with Waste Management Plan.                                   |
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1.5 WASTE  
MANAGEMENT AND  
DISPOSAL  
(Cont'd)

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- .4 Divert unused gypsum from landfill to gypsum recycling facility for disposal approved by Departmental Representative.
- .5 Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.
- .6 Divert unused wood materials from landfill to recycling facility approved by Project Manager.
- .7 Divert unused paint and caulking material from landfill to official hazardous material collections site approved by Departmental Representative.
- .8 Do not dispose of unused paint and caulking materials into sewer systems, into lakes, streams, onto ground or in other locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

2.1 MATERIALS

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- .1 Standard board: to ASTM C36/C36M Type X, 16 mm thick, 1200 mm wide x maximum practical length, ends square cut, edges bevelled. For walls, ceilings and bulkheads in general areas.
  - .2 Waterproof Building panel for ceramic and stone tile to be rigid extruded polystyrene foam building element panel, with reinforcement material and polypropylene fleece webbing laminated on both sides for thin-set ceramic tile and dimension stone Installations. For walls and ceilings in showers.
  - .3 Metal furring runners, hangers, tie wires, steel attachment washers, 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 Steel drill screws: to ASTM C 1002.
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2.1 MATERIALS  
(Cont'd)

- .6 Casing beads, control joints and edge trim: to ASTM C 1047, zinc-coated by electrolytic process, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .7 Sealants: in accordance with Section 07 92 00 - Joint Sealing.
- .8 Acoustic sealant: in accordance with Section 07 92 00.
- .9 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .10 Acoustic batt insulation: Batt and blanket mineral fibre: to CAN/ULC S702-09.
  - .1 Type: 1.
  - .2 Formaldehyde free, less than 0.022 ppm. Provide testing results.
  - .3 25% minimum recycled content.
  - .4 Thickness: to suit partition thickness, full stud thickness.
- .11 Steel screws, exterior sheathing board: Type S-12 bugle head, self-tapping, rust resistant, fine thread for heavy-gauge steel.
- .12 Insulating strip: rubberized, moisture resistant, 3 mm thick closed cell neoprene strip, 12 mm wide, with self sticking permanent adhesive on one face, lengths as required.
- .13 Joint compound: to ASTM C475/C475M, asbestos-free.
- .14 Waterproof strips in appropriate width and waterproof pre-formed corners for use with waterproof building panel (2.1.2) in shower.
- .15 Pipe seal and mixing valve seal with over molded rubber gasket for use with waterproof building panel in shower.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Do application and finishing of gypsum board in accordance with ASTM C840-08 except where specified otherwise.
- .2 Do application of gypsum sheathing in accordance with ASTM C 1280-09.
- .3 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C840-08 except where specified otherwise. If not connected to structure overhead provide structural steel support for ceilings to satisfaction of structural engineer using channels spanning across space.
- .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 and grilles.
- .7 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .8 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

3.2 INSULATION  
INSTALLATION

- .1 Install insulation in gypsum board partitions to meet acoustic requirements of building elements and spaces.
- .2 Fit insulation firmly between studs and closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation. Use pipe and mixing valve seals with overmolded rubber gasket with waterproof building panel in shower.
- .3 Do not compress insulation to fit into spaces.

3.2 INSULATION  
INSTALLATION  
(Cont'd)

- .4 Keep insulation minimum 3" (75mm) from heat emitting devices such as recessed light fixtures.
- .5 Do not enclose insulation until it has been inspected and approved by Departmental Representative.

3.3 APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.
- .2 Apply single layer of gypsum board to metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
  - .1 Single Layer Application:
    - .1 Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C840-08.
    - .2 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
  - .3 Apply waterproof building panel where indicated. Apply water-resistant sealant per manufacturer's instructions. Apply to all walls in shower as scheduled.
  - .4 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 and penetrations.
  - .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 with face side out.
  - .7 Do not install damaged or damp boards.
  - .8 At locations where gypsum board abuts the underside of steel deck, cut gypsum board using a template specifically made to ensure the board neatly and accurately follows the profile of the deck, with clearances for deflection.
  - .9 Locate edge or end joints over supports.



### 3.3 APPLICATION .9 (Cont'd)

- ### 3.4 INSTALLATION
- .1 Install casing beads around perimeter of suspended ceilings.
  - .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated.
  - .3 Construct control joints of preformed units set in gypsum board facing and supported independently on both sides of joint.
  - .4 Provide continuous polyethylene dust barrier behind and across control joints.
  - .5 Locate control joints at changes in substrate construction and at approximate 15m spacing on ceilings.
  - .6 Install control joints straight and true.
  - .7 Install access doors to electrical and mechanical fixtures specified in respective sections.
    - .1 Rigidly secure frames to furring or framing systems.
  - .8 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.
  - .9 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.
  - .10 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.
  - .11 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

3.4 INSTALLATION <u>(Cont'd)</u>	.12	Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
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PART1 - GENERAL

1.1 RELATED SECTIONS .1 Section 09 21 16 - Gypsum Board Assemblies.

1.2 REFERENCES .1 American Society for Testing and Materials International, (ASTM).  
.1 ASTM C 645-13, Specification for Nonstructural Steel Framing Members.  
.2 ASTM C 754-11, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

1.3 WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management System.  
.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.  
.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material for recycling in accordance with Waste Management Plan.  
.4 Divert unused metal materials from landfill to metal recycling facility approved by DCC Representative.  
.5 Divert unused gypsum materials from landfill to recycling facility approved by DCC Representative.

1.4 LEED DOCUMENTATION .1 Submit a LEED Material Submittal Form, as included in Section 01 33 00 Submittals to identify recycled content, regional content or VOC emission when required by Submittal Requirements.

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## PART 2 - PRODUCTS

### 2.1 MATERIALS

- .1 Non-load bearing channel stud framing: to ASTM C 645-09a, 150 mm stud size, roll formed from 0.91 mm (20 ga.) thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at 460 mm centres.
- .2 Floor and ceiling tracks: to ASTM C 645-09a, in widths to suit stud sizes, 32 mm flange height.
- .3 Metal channel stiffener: 18 x 28 mm size, 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.
- .4 Acoustical sealant: as per Section 07 92 00.
- .5 Insulating strip: rubberized, moisture resistant 3 mm thick foam strip, 12 mm wide, with self sticking adhesive on one face, lengths as required; at junction with exterior window frames.

## PART 3 - EXECUTION

### 3.1 ERECTION

- .1 Align partition tracks at floor and above ceiling and secure at 600 mm on centre maximum. Secure top track using "half track" to wall assembly.
- .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 track using screws.

3.1 ERECTION  
(Cont'd)

- .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 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 Frame openings and around built-in equipment, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .10 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .11 Extend all partitions to full height to u/s of roof structures.
- .12 Maintain clearance under beams and structural decks to avoid transmission of structural loads to studs. Provide a single 20 ga. track with studs cut 25 mm short and not fastened to track.
- .13 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .14 Install two continuous beads of acoustical sealant under studs and tracks around perimeter of all partitions. (Gypsum board is sealed to the leg of the runner rack using a bead of acoustical sealant when the board is installed by 09 21 16.)
- .15 Stud steel thickness:
  - .1 Use 0.91 mm (20 ga.) studs generally, except where otherwise indicated.

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

## PART 1 - GENERAL

<u>1.1 RELATED SECTIONS</u>	.1	Section 01 33 00 - Submittal Procedures.
	.2	Section 09 65 19 - Resilient Flooring.
	.3	Section 09 21 16 - Gypsum Board Assemblies.
	.4	Division 22 - Plumbing.
<u>1.2 REFERENCES</u>	.1	Canadian General Standards Board (CGSB)
	.1	CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
	.2	CAN/CGSB-25.20-95, Surface Sealer for Floors.
	.3	ASTM/ANSI A-118.10 for load bearing, bonded, waterproof membranes for thin set ceramic tile installation.
	.2	Canadian Standards Association (CSA International)
	.1	CAN/CSA-A3000-03(R2006), Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
	.3	Terrazzo Tile and Marble Association of Canada (TTMAC)
	.1	Tile Specification Guide 09 30 00 2012/2014, Tile Installation Manual.
	.2	Tile Maintenance Guide 2000.
<u>1.3 ACTION AND INFORMATIONAL SUBMITTALS</u>	.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.
	.1	Include manufacturer's information on:
	.1	Ceramic tile, marked to show each type, size, and shape required.
	.2	Uncoupling membrane.
	.3	Cementitious backer unit.
	.4	Waterproof rigid extruded polystyrene foam building panel.
	.5	Divider strip.
	.6	Elastomeric membrane and bond coat.
	.7	Reinforcing tape.

1.3 ACTION AND INFORMATIONAL SUBMITTALS (Cont'd)	.2 (Cont'd) .1 (Cont'd) .8 Levelling compound. .9 Acrylic cement mortar and grout. .10 Commercial cement grout. .11 Prefabricated shower floor base for thinset ceramic tile. .12 Slip resistant tile. .13 Waterproofing isolation membrane. .14 Fasteners.  .3 Provide samples in accordance with Section 01 33 00 - Submittal Procedures. .1 Wall tile: submit duplicate, sample tiles of each colour, texture, size, and pattern of tile. .2 Floor tile: submit duplicate sample tiles of each colour, texture, size, and pattern of tile. .3 Trim systems: submit 300mm length of each type of trim used for caps, coves and transitions in specified finish.
1.4 QUALITY ASSURANCE	.1 Quality Assurance Submittals: .1 Manufacturer's Instructions: manufacturer's installation instructions. .2 Manufacturer's Field Reports: manufacturer's field reports specified.
1.5 DELIVERY, STORAGE AND HANDLING	.1 Packing, shipping, handling and unloading: .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.  .2 Waste Management and Disposal: .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
1.6 AMBIENT CONDITIONS	.1 Maintain air temperature and structural base temperature at ceramic tile installation area above 18 degrees C for 48 hours before, during, and 48 hours after, installation.  .2 Do not install tiles at temperatures less than 12 degrees C or above 28 degrees C.



1.6 AMBIENT CONDITIONS (Cont'd) <u>PART 2 - PRODUCTS</u>	.3	Do not apply epoxy mortar and grouts at temperatures below 15 degrees C or above 25 degrees C.
2.1 FLOOR TILE	.1	CT-2 - Shower floors: porcelain, anti-slip R-11 tile: size: 100mm x 100mm; colour: selected by Consultant. Same tile series as washroom floor, CT-3. No base. .1 Acceptable product: Royal Mosa Global Collection; distributor - Elegant Flooring.
	.2	CT-3 - Washroom: Porcelain tile: to size: 304mmx304mm; colour selected by Consultant. Same tile series as Shower Floor CT-2. Matching base, 4" high. .1 Acceptable product: Royal Mosa Global Collection; distributor - Elegant Flooring.
2.2 WALL AND CEILING TILE	.1	CT-4 - Washroom walls including shower: Porcelain tile: to size: 304mmx304mm; Colour selected by Consultant. Same series washroom floors CT-3. .1 Acceptable product: Royal Mosa Global Collection; distributor - Elegant Flooring.
	.2	CT-5 - Kitchen backspash: Ceramic tile: 76mmx152mm. 70% neutral, 30% accent; colour selected by Consultant. Patterning to be provided by Consultant. .1 Acceptable product: United States Ceramic Tile color collection; distributed by Elegant Flooring.
2.3 BASE TILE	.1	Base: same tile as adjacent flooring material, except in showers. Cut to 4" high and capped with Schluter trim.
2.4 TRIM SHAPES	.1	Conform to applicable requirements of adjoining floor and wall tile.
	.2	Use trim shapes sizes conforming to size of adjoining field wall tile, including existing spaces, unless specified otherwise.

2.4 TRIM SHAPES  
(Cont'd)

- .3 At all unfinished outside corners, exposed edges of wall tile, and at cut base tile provide Schluter RO AT Satin Nickel sized to suit tile thickness.
- .4 At base tiles with unfinished, exposed edges, provide Schluter RO AT Satin Nickel sized to suit tile thickness.
- .5 For transition from ceramic tile to resilient flooring. Anchoring leg and adjustable sloped surface to suit adjacent floor material; Schluter RENO-V, anodized aluminum, sized to suit finished tile thickness. Install flush with finished tile surface and in strict accordance with the manufacturer's specifications.
- .6 For all tile floor to tile wall junctions use Schluter Dilex HK, satin nickel cove base sized to suit tile thickness. Include inside and outside corners of same product.

2.5 MORTAR  
MATERIALS

- .1 Adhesives:
  - .1 As per manufacturer's recommendation.
- .2 Dry set cement mortar: to ANSI A108.1.
- .3 Acceptable manufacturers of mortar and grout systems for ceramic tile are listed below. Use materials from one of these manufacturers for the entire project. Do not interchange systems' products.
- .4 MAPEI:
  - .1 Mortar materials:
    - .1 MAPEI Kerabond premium floor and wall DRY-Set mixed with:
    - .2 MPEI Keralastic Flexible Polymer additive.
  - .2 Grout materials:
    - .1 General: Keracolor-U / Keracolor-S polymer modified grouting compound, unsanded for walls, sanded for floors.
- .5 FLEXTILE:
  - .1 Mortar materials:
    - .1 #53 thin-set mortar, mixed with:
    - .2 #44 acrylic latex thin-set mortar additive.

2.5 MORTAR  
MATERIALS  
(Cont'd)

- .5 FLEXTILE:(Cont'd)
  - .2 Grout materials:
    - .1 General: Flexitile Polymer Modified Floor and Wall grout, unsanded for walls, sanded for floors.
- .6 LATICRETE:
  - .1 Mortar materials:
    - .1 Laticrete 272 Thin Set, mixed with:
    - .2 Laticrete 333 latex thin set mortar additive.
  - .2 Grout materials:
    - .1 Wall Laticrete 500 floor grout, sanded; Laticrete 600 wall grout, unsanded, with,
    - .2 Laticrete 3701 grout additive.
- .7 KIESEL:
  - .1 Mortar material:
    - .1 Walls: Kiesel Servolight thinset mortar.
    - .2 Floors: Kiesel Servoflex Trio Supertec thin and medium set mortar.
  - .2 Grout material:
    - .1 Kiesel Servoperl Royal Grout.

2.6 WATERPROOFING  
MATERIALS

- .1 Sloped shower floors of washrooms with showers with trapezoid-imprinted, prefabricated, sloped tiled shower tray base, made of 2.75 lb/ft<sup>3</sup> (44 kg/m<sup>3</sup>) density, self-extinguishing (HF-1 rating per UL-94) expanded polystyrene, with 313 mm diameter removable recessed section with 3 mm wide ribs on top and channels on the underside. Use size 1500 x 900mm by 38mm. Include ramp 1220 mm by 40 mm with slope from maximum thickness of 38 mm to minimum thickness of 6 mm. Waterproof with 0.2 mm thick, orange polyethylene membrane, with polypropylene fleece laminated on both sides, banding all seams with 125mm waterproof band. Drain for ABS Housing with Stainless Steel Type 304 = V2A Grate, 300 mm diameter, trapezoid-perforated, integrated bonding flange with polypropylene fleece thermally laminated to the surface and hubbed connection to 50 mm drain pipe. Grate assembly includes 102 mm x102 mm square grate, height adjustment collar, and lateral adjustment ring with trapezoid perforations.
  - .1 Acceptable Manufacturer: Schluter prefabricated shower tray

2.6 WATERPROOFING MATERIALS  
(Cont'd)

- .2 Uncoupling membrane to be 3 mm thick, orange, high-density polyethylene membrane with a grid structure of 12 mm x 12 mm square cavities, each cut back in a dovetail configuration, and a polypropylene anchoring fleece laminated to its underside. Conforms to definition for uncoupling membranes in the Tile Council of North America Handbook for Ceramic Tile Installation  
.1 Acceptable Manufacturer: Schluter - Ditra Mat
- .3 Waterproof Building panel for ceramic and stone tile to be rigid extruded polystyrene foam building element panel, with reinforcement material and polypropylene fleece webbing laminated on both sides for thin-set ceramic tile and dimension stone Installations.  
.1 Acceptable Manufacturer: Schluter - Kerdi Board
- .4 Floor of drying areas 1 metre immediately outside shower areas.

2.7 TRANSITION

- .1 For dissimilar transition from ceramic tile to other floor finishes (painted floor, vinyl tile,). Aluminum, satin anodized finish, anchoring leg and adjustable sloped surface to suit adjacent floor material; Schluter RENO-AEVT, or approved alternate, height to suit finished tile thickness. Install flush with finished tile surface and in strict accordance with the manufacturer's specification.

2.8 CONCRETE PATCH

- .1 Concrete patch to maintain floor slopes on prefabricated shower tray. Provide floor slopes as indicated on drawings. Acceptable manufacturers are listed below. Manufacturer's technical representative to be present during installation.  
.1 MAPEI: Mapecem Quickpatch.  
.2 LATICRETE: 816 LatiPatch.  
.3 PROMA: Pro Deep Patch RS.  
.4 Kiesel: Servacrete RS.

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| <u>2.9 CLEANING COMPOUNDS</u> | <ul style="list-style-type: none"><li>.1 Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and leveling compounds and elastomeric waterproofing membrane and coat.</li><li>.2 Materials containing acid or caustic material are not acceptable.</li></ul> |
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PART 3 - EXECUTION

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| <u>3.1 MANUFACTURER'S INSTRUCTIONS</u> | <ul style="list-style-type: none"><li>.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.</li></ul> |
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| <u>3.2 WORKMANSHIP</u> | <ul style="list-style-type: none"><li>.1 Do tile work in accordance with TTMAC Tile Installation Manual 2012-2014, "Ceramic Tile", except where specified otherwise.</li><li>.2 Apply tile or backing coats to clean and sound surfaces.</li><li>.3 Fit tile around corners, fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even. Do not split tiles.</li><li>.4 Maximum surface tolerance 1:800.</li><li>.5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.</li><li>.6 Lay out tiles so perimeter tiles are minimum 1/2 size.</li><li>.7 Sound tiles after setting and replace hollow-sounding units to obtain full bond.</li><li>.8 Make internal angles square. Use Schluter trim on external angles.</li></ul> |
|------------------------|--|

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- |  |     |  |
|--|-----|--|
| 3.2 WORKMANSHIP<br><u>(Cont'd)</u>                       | .9  | Use Schluter trim at termination of wall tile panels, except where panel abuts projecting surface or differing plane.  |
|  | .10 | Use Schluter trim cove at junction of all wall and floor tile.   |
|  | .11 | Install divider strips at junction of tile flooring and dissimilar materials.  |
|  | .12 | Allow minimum 24 hours after installation of tiles, before grouting.   |
|  | .13 | Clean installed tile surfaces after installation and grouting cured.   |
| <br>   |     |  |
| 3.3 WALL TILE<br><u></u>                                 | .1  | Install in accordance with TTMAC details.  |
| <br>   |     |  |
| 3.4 FLOOR TILE<br><u></u>                                | .1  | Install in accordance with TTMAC details.  |
|  | .2  | Install waterproofing membrane at shower bases and drying area 1 metre immediately outside shower area, and entire floor area of Assisted Care WC. Lap up surrounding walls 300mm. |
|  | .3  | Install floor tiles over waterproofing membrane in accordance with ANSI A 118.10 and TTMAC detail 319SR-2012-2014.   |
|  | .4  | Install floor tiles in accordance with TTMAC detail 311D, 2012-2014 over uncoupling system.  |
|  | .5  | Grout tile as specified to manufacturer's recommendations.   |
| <br>   |     |  |
| 3.5 BASE TILE<br><u></u>                                 | .1  | Install in accordance with TTMAC details.  |
| <br>   |     |  |
| 3.6 FLOOR SEALER<br>AND PROTECTIVE<br>COATING<br><u></u> | .1  | Apply in accordance with manufacturer's instructions.  |
-

3.7 FIELD QUALITY CONTROL .1 Manufacturer's Field Services:

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

3.8 CLEANING .1 Proceed in accordance with Section 01 74 11 - Cleaning.

PART 1 - GENERAL

1.1 RELATED SECTIONS.1 Section 01 33 00 - Submittal Procedures.

- .2 Section 01 35 29 - Health & Safety Requirements.
- .3 Section 01 45 00 - Quality Control.
- .4 Section 01 61 00 - Common Product Requirements.
- .5 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .6 Section 01 77 00 - Closeout Procedures.
- .7 Section 01 78 00 - Closeout Submittals.
- .8 Section 09 30 13 - Ceramic Tiling.

- 1.2 REFERENCES
- .1 American Society for Testing and Materials International (ASTM)
    - .1 ASTM F970-07(2011), Standard test Method for Static Load Limit.
    - .2 ASTM F1344-12 Standard Specification for Rubber Floor Tile.
    - .3 ASTM F1861-08(2012)e1, Standard Specification for Resilient Wall Base.
    - .4 ASTM F2034-08 Standard Specification for Sheet Linoleum Floor Covering.
    - .5 ASTM F2169-12 Standard Specification for Resilient Stair Treads.
  - .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
    - .1 Material Safety Data Sheets (MSDS).
  - .3 Underwriters Laboratories of Canada (ULC)
    - .1 CAN/ULC-S102.2-10, Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.
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- 1.3 SUBMITTALS
- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Provide manufacturers' product data and installation instructions for all resilient flooring products in accordance with Section 01 33 00 - Submittal Procedures.
  - .3 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
    - .1 Submit duplicate 300 x 300 mm (12" x 12") sample pieces of sheet material, 300mm (12") long sample piece of base, nosing, and edge strips.
  - .4 Closeout Submittals:
    - .1 Provide maintenance data for resilient flooring products for incorporation into specified manual in Section 01 78 00 - Closeout Submittals.
- 1.4 DELIVERY, STORAGE AND HANDLING
- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- 1.5 WASTE MANAGEMENT AND DISPOSAL
- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- 1.6 QUALITY ASSURANCE
- .1 Installer (Trade Contractor) Qualifications and Criteria:
    - .1 Company and personnel normally engaged in this type of work, with prior experience in installation of these types of materials.
    - .2 Certified by product manufacturer(s).
    - .3 Must not sub-contract labour without written approval of Consultant.
    - .4 Be responsible for proper product installation, including floor testing and preparation as specified and in accordance with resilient flooring manufacturers' written instructions.
  - .2 Pre-Installation Meeting:
-

- 1.6 QUALITY ASSURANCE (Cont'd) .2 Pre-Installation Meeting:(Cont'd)
- .1 The pre-installation meeting shall be held with the following people present:
- .1 The Consultant's Site Representative.
- .2 The Trade contractor and his designated crew supervisors who will be working on site on this project.
- .3 The Construction Manager.
- .4 Purpose of meeting shall be to:
- .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.
- .5 Items to be present - specifications, finish schedule, product data sheets - MSDS.

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

- 1.8 WARRANTY .1 For all Work of this Section 09 65 16, the 12 month warranty period is extended to a full five (5) year commercial warranty for materials and installation, non pro-rated.

## PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Linoleum Sheet Flooring (LSF):
- .1 Linoleum sheet to ASTM F2034, Type 1.
- .2 Products must meet FloorScore or GreenGuard requirements. All components of the flooring system must meet requirements of LEED EQc4.1 and EQc4.3.
- .3 Homogenous mixture of primarily natural materials consisting of linoleum cement (linseed oil, natural tree resin, drying oil catalyst), wood flour, limestone and colour pigments, mixed and calendared onto a natural

2.1 MATERIALS  
(Cont'd)

- .1 (Cont'd)
  - .3 (Cont'd)  
jute backing. Pattern and colour to extend through total thickness of material.
  - .4 Width: 2000mm (79").
  - .5 Nominal total thickness (guage): 2.5 mm (1/10").
  - .6 Top coat/finish: high performance coating to protect the surface.
  - .7 Seams: heat welding rod; colour-matched or multi-colour heat welding rod. Colour to be compatible with field colour of flooring, selected from available range.
  - .8 Acceptable materials:
    - .1 Linoleum Sheet Flooring (LSF):
      - .1 Colorette by Armstrong World Industries.
      - .2 Marmoleum Piano by Forbo Flooring Systems.
    - .2 Adhesive:
      - .1 S-782 High Moisture by Armstrong World Industries.
      - .2 Sustain 885M by Forbo Flooring Systems.
- .2 Rubber base (R):
  - .1 Thermoset rubber wall base to ASTM F1861, Type TS, Group 1 (solid).
  - .2 Continuous, top set, complete with premoulded inside and outside corners.
  - .3 Style: toeless (straight).
  - .4 Thickness: 3.17mm (1/8").
  - .5 Height: 64 mm (2½").
  - .6 Lengths: cut lengths from 120' coils.
  - .7 Colour: several colours in various locations, as selected by Consultant, from Color Palettes A, B or C.
- .3 Primers and adhesives: of types recommended by flooring manufacturer for specific material on applicable substrate, above, on or below grade.
  - .1 Sheet floor and tile adhesives: maximum VOC limit 60 g/L to SCAQMD Rule 1168.
  - .2 Rubber base adhesives: maximum VOC limit 50 g/L to SCAQMD Rule 1168.
  - .3 Epoxy nosing compound filler at all stair nosings; Johnsonite 930 Epoxy Caulking Compound.
- .4 Edge strips:

- |                           |    |   |
|---------------------------|----|---|
| 2.1 MATERIALS<br>(Cont'd) | .4 | Edge strips:(Cont'd)  |
|                           | .1 | Use vinyl reducers/transitions at changes of all resilient flooring materials to concrete or painted concrete flooring.   |
|                           | .2 | Transitions at ceramic tile by Section 09 30 13.  |
|                           | .5 | Joint Filler:   |
|                           | .1 | Fast-setting, semi-rigid polyuera joint filler, capable of being trimmed flush with the floor, for all saw cuts in Level 1 topping slabs and at all cold pour joints in structural slabs. |
|                           | .2 | Acceptable material: Euco Qwikjoint 200 by The Euclid Chemical Company.   |

### PART 3 - EXECUTION

- |                                 |    |   |
|---------------------------------|----|---|
| 3.1 MANUFACTURER'S INSTRUCTIONS | .1 | Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets. |
|---------------------------------|----|---|

- |                |    |   |
|----------------|----|---|
| 3.2 INSPECTION | .1 | Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.  |
|                | .2 | Visually inspect for evidence of dusting mold and mildew.   |
|                | .3 | Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory moisture and/or conditions have been corrected.                             |
|                | .4 | Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation. |

3.3 APPLICATION:  
LINOLEUM  
SHEET FLOORING

- .1 Install flooring in strict accordance with the latest edition of the manufacturer's printed installation instructions.
- .2 Install flooring wall to wall before the installation of furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.
- .3 If required, install flooring on pan-type floor access covers. Maintain continuity of colour and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.
- .4 Scribe, cut, and fit or flash cove to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.
- .5 Adhere flooring to the subfloor without cracks, voids, raising and puckering at the seams. Roll with a 100 lb. (45 kg.) roller in the field areas. Hand-roll flooring at the perimeter and the seams to assure adhesion. Refer to specific rolling instructions of the flooring manufacturer.
- .6 Lay flooring to provide a minimum number of seams. Avoid cross seams, filler pieces, and strips. Match edges for colour shading and pattern at the seams in compliance with the manufacturer's recommendations.
- .7 Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.
- .8 Prepare heat-welded seams with special routing tool supplied for this purpose and heat weld with vinyl welding rod in seams. Use methods and sequence of work in conformance with written instructions of the flooring manufacturer. Finish all seams flush and free from voids, recesses, and raised areas.
- .9 Install edge strips at unprotected or exposed edges where flooring terminates.

- 3.4 APPLICATION:  
BASE
- .1 Lay out base to keep number of joints at minimum.
  - .2 Clean substrate and prime with one coat of adhesive.
  - .3 Apply adhesive to back of base.
  - .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
  - .5 Install straight and level to variation of 1:1000.
  - .6 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.
  - .7 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles, minimum 300mm (12") each leg.
  - .8 Apply base to all built-in millwork as indicated.
- 3.5 CLEANING
- .1 Clean in accordance with manufacturer's written instructions.
  - .2 Perform initial maintenance in accordance with manufacturer's written instructions. Contact Manufacturer's technical representative prior to initial clean.
  - .3 Remove excess adhesive from floor, base and wall surfaces with damp mop and a neutral detergent.
  - .4 Dry buff flooring with a 1000 rpm plus rotary machine fitted with a suitable clean pad.
- 3.6 PROTECTION
- .1 Protect new floors from after initial cleaning until final inspection.
  - .2 Prohibit traffic on floor for 48 hours after installation.

## PART 1 - GENERAL

### 1.1 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 - 2005
- .6 Society for Protective Coatings (SSPC)
  - .1 SSPC Painting Manual, Volume Two, 2008 Edition, Systems and Specifications Manual.

### 1.2 QUALITY ASSURANCE

- .1 Mock-Ups:
  - .1 Construct mock-ups in accordance with Section 01 45 00 - Testing and Quality Control.
    - .1 Provide 2500mm x 2500mm 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 by Departmental Representative.
      - .4 Allow 48 hours for inspection of mock-up before proceeding with work.
      - .5 When accepted, mock-up will demonstrate minimum standard of quality

1.2 QUALITY  
ASSURANCE  
(Cont'd)

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- .1 Mock-Ups:(Cont'd)
  - .1 (Cont'd)
  - .5 (Cont'd)  
required for this work. Approved mock-up  
may remain as part of finished work.
- .2 Pre-Installation Meeting:
  - .1 Convene pre-installation meeting two  
weeks prior to beginning work of this Section.
    - .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.
  - .2 The pre-installation meeting shall be  
held with the following people present:
    - .1 The Departmental Representative.
    - .2 The applicator and his designated  
inspectors and crew supervisors who will  
be working on site on this project.
    - .3 The General contractor's inspection  
staff.
  - .3 Items to be present - specifications,  
finish schedule, colour schedule, product data  
sheets - MSDS.
- .3 Health and Safety:
  - .1 Do construction occupational health and  
safety in accordance with Section 01 35 29 -  
Health and Safety Requirements.

1.3 SCHEDULING

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- .1 Submit work schedule for various stages of  
painting to Departmental Representative for  
review. Submit schedule minimum of 72 hours in  
advance of proposed operations.
- .2 Obtain written authorization from Project  
Manager for changes in work schedule.
- .3 Schedule painting operations to prevent  
disruption of occupants.

1.4 SUBMITTALS

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



- 1.4 SUBMITTALS  
(Cont'd)
- .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 three 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 of colour sample chips.
- .4 Manufacturer's Instructions:
- .1 Submit manufacturer's installation and application instructions.
- .5 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.
- 1.5 MAINTENANCE
- .1 Extra Materials:
- .1 Deliver 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 and finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
  - .3 Delivery, storage and protection: comply with Departmental Representative's requirements for delivery and storage of extra materials.
-

1.6 DELIVERY,  
STORAGE AND  
HANDLING

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- .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°C to 30°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 9kg 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.

1.6 DELIVERY,  
STORAGE AND  
HANDLING  
(Cont'd)

- .9 Waste Management and Disposal:
- .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management System.
  - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
  - .3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material for recycling in accordance with Waste Management Plan (WMP).
  - .4 Separate for reuse and recycling and place in designated containers Steel Metal and Plastic 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 appropriate regulations.
  - .7 Ensure emptied containers are sealed and stored safely.
  - .8 Unused paint materials must be disposed of at official hazardous material collections site as approved by Departmental Representative.
  - .9 Paint 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

1.6 DELIVERY,  
STORAGE AND  
HANDLING  
(Cont'd)

- .9 Waste Management and Disposal:(Cont'd)
- .12 (Cont'd)
- .3 (Cont'd)
- 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.
- .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 or organizations for verifiable re-use or re-manufacturing.

1.7 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
- .1 Ventilate enclosed spaces.
- .2 Perform no painting work unless adequate and continuous ventilation and sufficient heating facilities are in place 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 Departmental Representative 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 and product manufacturer, perform no painting when:
- .1 Ambient air and substrate temperatures are below 10 degrees C.

1.7 SITE CONDITIONS .2  
(Cont'd)

(Cont'd)

.1 (Cont'd)

.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 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.

.4 Test for moisture using calibrated electronic Moisture Meter. Test concrete floors for moisture using "cover patch test".

.3 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.

- 1.7 SITE CONDITIONS .4 Additional interior application requirements:  
 (Cont'd) .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.

## PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Qualified products: only paint materials listed in this specification 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.

- 2.2 COLOURS .1 Departmental Representative will provide Colour Schedule after Contract award.
- .2 Colour schedule will be based upon selection of five base colours and three accent colours. No more than eight colours will be selected for entire project and no more than three colours will be selected in each area.
- .3 Where specific products are available in restricted range of colours, selection will be based within the restricted range.
- .4 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

- 2.3 INTERIOR PAINTING SYSTEMS .1 The following interior paint formula types are based on the following manufacturers' products.
- .1 PPG: Pittsburgh Paints.
- .2 BM: Benjamin Moore.
- .3 ICI: ICI, Glidden or Devoe.

2.3 INTERIOR  
PAINTING SYSTEMS  
(Cont'd)

- .2 Paint PT-1: For concrete block walls apply:
  - .1 One coat heavy duty epoxy block filler (PPG Code 16-90). Two coats water based epoxy (PPG Code 98 Line) @ 3 mils DFT per coat.
  - .2 One coat heavy duty epoxy block filler (BM 595). Two coats water based epoxy (BM M43-44) @ 3 mils DFT per coat.
  - .3 One coat heavy duty epoxy block filler (ICI 4010). Two coats water based epoxy (ICI 4408) @ 3 mils DFT per coat.
- .3 Paint PT-2: For gypsum board walls, apply:
  - .1 One coat 100% acrylic primer (PPG code 6-2). Two coats gloss water based epoxy (PPG Code 98 Line) @ 2.0 to 3.0 mils DFT per coat.
  - .2 One coat 100% acrylic primer (BM 586). Two coats gloss water based epoxy (BM M43-44) @ 2.0 to 3.0 mils DFT per coat.
  - .3 One coat 100% acrylic primer (ICI 36600). Two coats gloss water based epoxy (ICI 4408) @ 2.0 to 3.0 mils DFT per coat.
- .4 Paint PT-3: For gypsum board ceilings, apply:
  - .1 One coat latex primer (PPG Code 6-2). Two coats of acrylic latex eggshell (PPG Code 89-Line) @ 1.5 to 2.0 mils DFT per coat.
  - .2 One coat latex primer (BM 586). Two coats acrylic latex eggshell (BM 223) @ 1.5 to 2.0 mils DFT per coat.
  - .3 One coat latex primer (ICI 36600). Two coats acrylic latex eggshell (ICI 59325) @ 1.5 to 2.0 mils DFT per coat.
- .5 Paint PT-4: For steel doors and frames (interior), apply:
  - .1 One coat primer (PPG Code 90-712) @ 1.5 to 2.0 DFT. Two coats of scrubable gloss 100% acrylic (PPG Code 90-374 Series) @ 2.0 to 3.0 mils DFT per coat.
  - .2 One coat primer (BM 586) @ 1.5 to 2.0 mils DFT. Two coats of scrubable gloss 100% acrylic (BM M-29) @ 2.0 to 3.0 mils DFT per coat.
  - .3 One coat primer (ICI 4020) @ 1.5 to 2.0 mils DFT. Two coats of scrubable gloss 100% acrylic (ICI 4216) @ 2.0 to 3.0 mils DFT per coat.
- .6 Paint PT-5: For shop primed metal railings, stairs, exposed columns, beams, u/s of stairs, etc., apply:
  - .1 Two coats water based epoxy (PPG Code 98 Line) @ 3 mils DFT per coat.

2.3 INTERIOR  
PAINTING SYSTEMS  
(Cont'd)

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- .6 Paint PT-5:(Cont'd)
    - .2 Two coats water based epoxy (BM M43-44) @ 3 mils DFT per coat.
    - .3 Two coats water based epoxy (ICI 4408) @ 3 mils DFT per coat.
  - .7 Paint PT-6: For concrete floors and stair treads, apply:
    - .1 Two coats water based epoxy (PPG Code 98-line) @ 3 mils DFT per coat.
    - .2 Two coats water based epoxy (BM M43-44) @ 3 mils DFT per coat.
    - .3 Two coats water based epoxy (ICI 4408) @ 3 mils DFT per coat.
  - .8 Paint PT-8: for electrical panel plywood backboards, apply:
    - .1 Two coats of fire retardant latex (PPG Code 42-7).
    - .2 Two coats of fire retardant latex (ICI Safecoat 451).
  - .9 Paint PT-9: For unprimed ferrous metals, pipes, etc., apply:
    - .1 One coat Pitt Tech Primer (PPG Code 90-712). Two coats of adjacent ceiling or wall finish.
    - .2 One coat acrylic latex metal primer (BM M04). Two coats of adjacent ceiling or wall finish.
    - .3 One coat Devoe metal primer (ICI 4020). Two coats of adjacent ceiling or wall finish.
  - .10 Paint PT-10: For exposed galvanized ductwork apply:
    - .1 One coat Pitt Tech Primer (PPG Code 90-712) @ 2mils DFT. Two coats of same paint as adjacent wall/ceiling area.
    - .2 One coat acrylic latex metal primer (BM Code M04) @ 2mils DFT. Two coats of same paint as adjacent wall/ceiling area.
    - .3 One coat Devoe galvanized primer (ICI 4020) @ 2mils DFT. Two coats of same paint as adjacent wall/ceiling area.
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PART 3 - EXECUTION

- 3.1 MANUFACTURER'S INSTRUCTIONS .1 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 Project Manager 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 Gypsum board: 12%.
- .2 Concrete: 12%.
- .3 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 Departmental Representative.
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3.4 PREPARATION  
(Cont'd)

- .1 Protection:(Cont'd)
  - .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 in and about the building.
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
  - .1 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
  - .2 Wash surfaces with a biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
  - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
  - .4 Allow surfaces to drain completely and allow to dry thoroughly.
  - .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
  - .6 Use trigger operated spray nozzles for water hoses.
  - .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.
- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive

- 3.4 PREPARATION  
(Cont'd)
- .4 (Cont'd)  
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.
- .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 of shop primers with primer as specified.
- .9 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.
- 3.5 APPLICATION
- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush, roller, air sprayer or 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
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3.5 APPLICATION  
(Cont'd)

- .2 Brush and Roller Application:(Cont'd)
  - .3 (Cont'd)  
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 closets and alcoves as specified for adjoining rooms.

3.5 APPLICATION (Cont'd)	.10	Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.
3.6 MECHANICAL EQUIPMENT	.1	In unfinished areas leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish.
	.2	Do not paint over nameplates.
	.3	Keep sprinkler heads free of paint.
	.4	Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
	.5	Paint fire protection piping to match ceiling.
	.6	Paint disconnect switches for fire alarm system and exit light systems in red enamel.
	.7	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.
3.7 FIELD QUALITY CONTROL	.1	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 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.
	.2	Advise Departmental Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
	.3	Cooperate with inspection firm and provide access to areas of work.
	.4	Retain purchase orders, invoices and other documents to prove conformance with

3.7 FIELD QUALITY CONTROL (Cont'd) .4 (Cont'd)  
specification when requested by Project Manager.

- 3.8 RESTORATION .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Project Manager. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.