

Part 1 General

1.1 REFERENCES

- .1 National Building Code of Canada (NBC).
- .2 Manitoba Building Code (MBC).
- .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.

1.2 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.

1.3 SITE ENVIRONMENTAL REQUIREMENTS

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

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with D13 – Environmental Protection Plan.
- .3 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .4 Collect and separate for disposal packaging material for recycling.

Part 2 Products

2.1 MATERIALS

- .1 Standard board: to ASTM C36/C36M regular, 12 mm and Type X, 12 mm and 16 mm thick, 1220 mm wide x maximum practical length, ends square cut, edges bevelled.
- .2 Water-resistant board: to ASTM C630/C630M 16 mm thick x 1220 wide x maximum practical length.
- .3 Abuse resistant board: 16 mm x 1220 mm wide x maximum practical length. Canadian Gypsum Corporation (CGC) Sheetrock Abuse Resistant Panels or equivalent meeting same penetration, chisel, indentation, and abrasion resistance performance testing.
- .4 Use fire rated board at ULC rated assemblies.
- .5 Metal furring runners, hangers, tie wires, inserts and anchors.
- .6 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .7 Resilient clips, drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .8 Nails: to ASTM C514.
- .9 Steel drill screws: to ASTM C1002.
- .10 Stud adhesive: to CAN/CGSB-71.25, ASTM C557.
- .11 Laminating compound: as recommended by manufacturer, asbestos-free.
- .12 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, metal, zinc-coated by electrolytic process, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .13 Sealants: in accordance with Section 07 92 10 – Joint Sealing.
- .14 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .15 Joint compound: to ASTM C475, asbestos-free.

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 and bulkhead in accordance with ASTM C840 except where specified otherwise.
- .4 Install work level to tolerance of 1:1200.
- .5 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, where required.
- .6 Install 20 x 65 furring channels parallel to, and at exact locations of steel stud partition header track.
- .7 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .8 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.
- .9 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

3.2 APPLICATION

- .1 Install abuse resistant gypsum board in corridors, office areas, lunch rooms and locker rooms.
- .2 Install regular gypsum board within closets and at gypsum board ceilings.
- .3 Install moisture resistant board on walls in humid areas such as washrooms and shower rooms.
- .4 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical works are approved.
- .5 Apply single layer gypsum board to wood and metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm on center:
 - .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.
- .6 Apply single layer gypsum board to concrete or concrete block surfaces, where indicated, using laminating adhesive:
 - .1 Comply with gypsum board manufacturer's recommendations.
 - .2 Brace or fasten gypsum board until fastening adhesive has set.
 - .3 Mechanically fasten gypsum board at top and bottom of each sheet.
- .7 Install ceiling boards in direction that will minimize number of end-butt joints.
- .8 Install gypsum board on walls vertically to avoid end-butt joints.

- .9 Install gypsum board with face side out.
- .10 Do not install damaged or damp boards.
- .11 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 6" on center.
- .2 Install casing beads around perimeter of bulkhead.
- .3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated.
- .4 Splice corners and intersections together and secure to each member with three screws.
- .5 Install access doors to electrical and mechanical fixtures specified in respective sections:
 - .1 Rigidly secure frames to furring or framing systems.
- .6 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.
- .7 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 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.
- .8 Finish corner beads and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .9 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.
- .10 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .11 Completed installation to be smooth, level or plumb, free from waves, other defects and ready for surface finish.
- .12 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.

- .13 Mix joint compound slightly thinner than for joint taping.
- .14 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.
- .15 Allow skim coat to dry completely.
- .16 Remove ridges by light sanding or wiping with damp cloth.
- .17 Provide protection that ensures gypsum drywall work will remain without damage or deterioration at time of substantial completion.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 09 21 00 - Gypsum Board Assemblies.
- .2 This section includes the requirements for non-load bearing interior light gauge metal framing as well as wind load bearing exterior wall stud framing.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM):
 - .1 ASTM C645-00, Specification for Non-structural 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.

1.3 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.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Supplemental Conditions D13 – Environmental Plan. Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Collect and separate for disposal packaging material for recycling in accordance with Waste Management Plan.
- .3 Divert unused metal materials from landfill to metal recycling facility approved by Contract Administrator.
- .4 Divert unused gypsum materials from landfill to recycling facility approved by Contract Administrator.

Part 2 Products

2.1 MATERIALS

- .1 Non-load bearing internal channel stud framing: to ASTM C645, 92 mm stud size, or as indicated on drawings, roll formed from 25 ga. (0.59 mm) thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at 450 centres.
- .2 Floor and ceiling tracks: to ASTM C645, in widths to suit stud sizes, 32 flange height.
- .3 Metal channel stiffener: 67 x 22 mm size, 25ga thick cold rolled steel, hot dipped galvanized steel.
- .4 Insulating strip: rubberized, moisture resistant 3 mm thick foam strip, 12 wide, with self sticking adhesive on one face, lengths as required.
- .5 Wood blocking: 19 mm fir plywood as indicated on drawings and or solid 38mm x 140 softwood secured between metal studs within partitions to provide support for loads and rigid backing for wall mounted equipment, washroom accessories, and mill work.

Part 3 Execution

3.1 ERECTION

- .1 Align partition tracks at floor and ceiling and secure at 600 on centre maximum.
- .2 Place studs vertically at 400 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.
- .3 Erect metal studding to tolerance of 1:1000.
- .4 Attach studs to bottom and ceiling track using screws.
- .5 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .6 Co-ordinate erection of studs with installation of door frames and special supports or anchorage for work specified in other Sections.
- .7 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50 apart using column clips or other approved means of fastening placed alongside frame anchor clips.
- .8 Install heavy gauge single jamb studs at openings.
- .9 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.

- .10 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .11 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .12 Extend partitions to underside of slab except where noted otherwise on drawings.
- .13 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use 50 leg ceiling tracks.
- .14 Install continuous insulating strips to isolate studs from un-insulated surfaces.
- .15 Install two continuous beads of acoustical sealant under studs and tracks around perimeter of sound control partitions.
- .16 Provide double head track under structural components to accommodate anticipated vertical deflection.
- .17 Install minimum wood blocking to support loads and provide rigid backing for wall mounted equipment, washroom accessories, and mill work.

3.2 CLEANING

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

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Mechanical and electrical divisions for trim at recessed mechanical fixtures and light fixtures.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM International):
 - .1 ASTM C635-00, Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
 - .2 ASTM C636-96, Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

1.3 DESIGN REQUIREMENTS

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

1.4 SHOP DRAWINGS

- .1 Submit reflected ceiling plans for special grid patterns as indicated.
- .2 Indicate lay-out and acoustical unit support at ceiling fixture.

1.5 SAMPLES

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

1.6 REGULATORY REQUIREMENTS

- .1 Fire-resistance rated suspension system: certified by a Canadian Certification Organization accredited by Standards Council of Canada.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with D13 - Environmental Protection Plan.
- .2 Divert unused metal materials from landfill to metal recycling facility approved by Contract Administrator.
- .3 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .4 Dispose of packaging material in appropriate on-site bin for recycling in accordance with site waste management program.

Part 2 Products

2.1 SUSPENSION MATERIALS

- .1 Intermediate duty system to ASTM C635.
- .2 Basic materials for suspension system: commercial quality cold rolled steel, zinc coated.
- .3 Suspension system: non fire rated, acceptable products:
 - .1 Armstrong World Industries: Prelude.
 - .2 CGC: Series Donn DX Quick Release
 - .3 Bailey: Standard B.E. Safe-T-Lock
- .4 Exposed tee bar grid components: shop painted satin white enamel. Components die cut. Main tee with double web, rectangular bulb and 1" rolled cap on exposed face. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection.
- .5 Hanger wire: galvanized soft annealed steel wire.
 - .1 12 ga overall thickness for access tile ceilings.
- .6 Hanger inserts: purpose made.
- .7 Carrying channels where required: 1 1/2"x 1 1/2" channel, of 25ga thick galvanized steel.
- .8 Accessories: splices, clips, wire ties, retainers and wall moulding flush, to complement suspension system components, as recommended by system manufacturer.

2.2 ACOUSTIC MATERIALS

- .1 Acoustic units for suspended ceiling system: to CAN/CGSB-92.1, ASTM E1264:
 - .1 Type 3.
 - .2 Class A.
 - .3 Wet formed mineral fibre containing 58% recycled content.
 - .4 Textures: fine.
 - .5 Noise Reduction Coefficient (NRC) designation of 0.60.
 - .6 Ceiling Attenuation Class (CAC) rating 30, in accordance with ASTM E1264
 - .7 Light Reflectance (LR) range of .85.
 - .8 Edge type: square.
 - .9 Colour white.
 - .10 Size 24" x 48" x 5/8" thick.
 - .11 Shape: flat.
- .2 Adhesive: low VOC type recommended by acoustic unit manufacturer.
- .3 Staples, nails and screws: to CSA B111 non-corrosive finish as recommended by acoustic unit manufacturer.

- .4 Fibrous acoustical media: to CAN/CGSB-92.1.
- .5 Polyethylene: to CAN/CGSB-51.34, 6 mil thick.
- .6 Hold down clips: purpose made clips to secure tile to suspension system, approved for use in fire-rated systems.
- .7 Acceptable suppliers:
 - .1 Armstrong World Industries: Mesa
 - .2 CGC: Majestic Clima Plus

2.3 ACCESS DOORS

- .1 Flush mounted, hinged access door minimum size 610 mm x 1220 mm installed in framed opening to allow convenient access to mechanical equipment located above ceiling for routine maintenance such as filter changing.
- .2 Surface of panel to be mat finished baked enamel steel that locks in place but does not require special tools to open.

Part 3 Execution

3.1 INSTALLATION

- .1 Installation: in accordance with ASTM C636 except where specified otherwise.
- .2 Install suspension system to manufacturer's instructions.
- .3 Do not erect ceiling suspension system until work above ceiling has been inspected by Contract Administrator.
- .4 Secure hangers to overhead structure using attachment methods to manufacturer's instructions.
- .5 Install hangers spaced at maximum 1220 mm centres and within 150 mm from ends of main tees.
- .6 Lay out system according to reflected ceiling plan.
- .7 Ensure suspension system is co-ordinated with location of related components.
- .8 Install wall moulding to provide correct ceiling height.
- .9 Completed suspension system to support super-imposed loads, such as lighting fixtures diffusers and grilles.
- .10 Support at light fixtures, diffusers with additional ceiling suspension hangers within 150 mm of each corner and at maximum 610 mm around perimeter of fixture.
- .11 Interlock cross member to main runner to provide rigid assembly.

- .12 Frame at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights.
- .13 Install access splines to provide 50 percent ceiling access.
- .14 Finished ceiling system to be square with adjoining walls and level within 1:1000.

3.2 CLEANING

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

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)/Ceramic Tile Institute (CTI)
 - .1 ANSI A108.1-99, Specification for the Installation of Ceramic Tile (Includes ANSI A108.1A-C, 108.4-.13, A118.1-.10, ANSI A136.1).
- .2 Canadian General Standards Board (CGSB)
 - .1 CGSB 71-GP-22M-78, Adhesive, Organic, for Installation of Ceramic Wall Tile.
 - .2 CAN/CGSB-75.1-M88, Tile, Ceramic.
 - .3 CAN/CGSB-25.20-95, Surface Sealer for Floors.
- .3 Terrazzo Tile and Marble Association of Canada (TTMAC)
 - .1 Tile Specification Guide 09300 2000, Tile Installation Manual.
 - .2 Tile Maintenance Guide 2000.

1.2 QUALITY ASSURANCE

- .1 This work shall be installed by workers who are skilled in the use of these materials and installation methods and in accordance with the recommendations of the manufacturer under the direct supervision of a competent foreman.

1.3 PRODUCT DATA

- .1 Submit product data in accordance with E5 – Additional Submissions.
- .2 Include manufacturer's information on:
 - .1 Ceramic tile, marked to show each type, size, and shape required.
 - .2 Divider strip.
 - .3 Levelling compound.
 - .4 Latex-Portland cement mortar and grout.
 - .5 Commercial Portland cement grout.
 - .6 Organic adhesive.
 - .7 Slip resistant tile.
 - .8 Waterproofing isolation membrane.
 - .9 Fasteners.
 - .10 EPDM membrane.

1.4 SAMPLES

- .1 Base tile: submit duplicate 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile in accordance with E5 – Additional Submissions.

- .2 Floor tile: submit duplicate 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile.
- .3 Trim shapes: Cap moulding along top of baseboard edges and exposed vertical edges of tile.
- .4 Adhere tile samples to 11 mm thick plywood and grout joints to represent project installation.

1.5 DELIVERY, STORAGE AND HANDLING

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

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance project requirements.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

1.7 ENVIRONMENTAL CONDITIONS

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

1.8 EXTRA MATERIAL

- .1 Provide maintenance materials in accordance with Special Provisions of the contract.
- .2 Provide minimum 2% or ten tiles minimum of each type and colour of tile required for project for maintenance use. Store where directed.
- .3 Maintenance material to be of same production run as installed material.

Part 2 Products

2.1 FLOOR TILE

- .1 CT – 1:
 - .1 Ceramic tile: to CAN/CGSB-75.1-M88, Type 4, Class MR 1, 300 x 300 x 9 mm size, square edges, slip resistant surface.

- .2 Matching coved base, 100 mm high, square top with anodized aluminum top edge trim.
- .3 Product: Vitra Colour Dot series, matte finish, colour: from standard product range, distributed by Centura.
- .2 CT – 2:
 - .1 Ceramic tile: to CAN/CGSB-75.1-M88, Type 4, Class MR 1, 50 x 50 x 6 mm size, square edges, matte, slip resistant surface.
 - .2 Product: Vitra Colour Dot series, matte finish, colour: from standard product range, distributed by Centura.

2.2 WALL TILE

- .1 CT-3:
 - .1 Ceramic tile: to CAN/CGSB-75.1, Type 3, Class MR 2, 150 x 150 x 4 mm size, square edges, glazed surface, white colour as selected by Contract Administrator.
 - .2 Matching bullnose edge trim to suit application.
 - .3 Product: GW100, Intersource Plain Series, distributed by Centura

2.3 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.
- .3 Internal and external corners: Provide trim shapes as follows:
 - .1 Bullnose shapes for external corners including edges.
 - .2 Coved shapes for internal corners.

2.4 MORTAR AND ADHESIVE MATERIALS

- .1 Portland cement: to CSA-A5, type 10.
- .2 Sand: to ASTM C144, passing 16 mesh.
- .3 Hydrated lime: to ASTM C207.
- .4 Latex additive: formulated for use in Portland cement mortar and thin set bond coat.
- .5 Water: potable and free of minerals and chemicals which are detrimental to mortar and grout mixes.

2.5 BOND COAT

- .1 Latex modified Portland Cement mortar: to ANSI A108.1, two-component universal dry-set mortar.

2.6 GROUT

- .1 Colouring pigments:
 - .1 Pure mineral pigments, lime proof and nonfading, complying with ASTM C979.
 - .2 Colouring pigments to be added to grout by manufacturer.
 - .3 Job coloured grout are not acceptable.
- .2 Latex-Portland Cement Grout: to ANSI A108.1, fast curing, high early strength, polymer-modified, stain resistant, sanded mix for floors, unsanded mix for walls and floors with polished tiles commercial tile grout.

2.7 ACCESSORIES

- .1 Transition strips: purpose made metal extrusion; stainless steel type.
- .2 Sealant: in accordance with Section 07 92 10 - Joint Sealing.
- .3 Floor sealer and protective coating: to tile and grout manufacturer's recommendations.
- .4 Top cap/trim: Schluter Jolly anodised aluminum trim in satin nickel finish.
- .5 EPDM membrane: 45 mil one piece membrane to line shower areas under sloped mortar bed, clamped to floor drains.

2.8 MIXES

- .1 Mortars and adhesives:
 - .2 Contractor to review suitability of products and installation methods prior to ordering of any materials and comment on suitability for long term durability of the finished installation, considering the condition of substrate, intended use, and products to be installed.
 - .3 Mortar bed at showers: latex modified portland cement based mortar to build up uniform slope at shower floors.
 - .4 Thin set mortar: latex modified ANSI 118.1, or ANSI 118.4 (CGSP 71-GP-30M), for glazed and unglazed floor tile, water absorption class MR 2
 - .1 Kerabond or Ultraflex II by Mapei,
 - .2 Multicure modified system by C-Cure, or
 - .3 Versatile by Flextile
 - .5 Organic adhesive: pre-mixed, for wall tiles.
 - .6 Mix bond and levelling coats, and grout to manufacturer's instructions.
 - .7 Adjust water volumes to suit water content of sand.

2.9 PATCHING AND LEVELING COMPOUND

- .1 Portland cement base, acrylic polymer compound, manufactured specifically for resurfacing and levelling concrete floors. Products containing gypsum are not acceptable.
- .2 Have not less than the following physical properties:
 - .1 Compressive strength - 25 MPa.
 - .2 Tensile strength - 7 MPa.
 - .3 Flexural strength - 7 MPa.
 - .4 Density - 1.9.
- .3 Capable of being applied in layers up to 50 mm thick, being brought to feather edge, and being trowelled to smooth finish.
- .4 Ready for use in 48 hours after application.

2.10 CLEANING COMPOUNDS

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

Part 3 Execution

3.1 WORKMANSHIP

- .1 Do tile work in accordance with TTMAC Tile Installation Manual 2000, "Ceramic Tile", except where specified otherwise.
- .2 Install seamless EPDM membrane in one piece to allow perimeter to extend 150 mm up walls above base of shower floors, adhering to sub base, clamped to floor drain.
- .3 Install mortar bed in shower areas to ensure positive 2% slope toward floor drains from all locations. Minimum bed depth 50 mm at drains.
- .4 Apply tile or backing coats to clean and sound surfaces.
- .5 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.
- .6 Maximum surface tolerance 1:800.
- .7 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.
- .8 Lay out tiles so perimeter tiles are minimum 1/2 size.

- .9 Sound tiles after setting and replace hollow-sounding units to obtain full bond.
- .10 Make internal angles square, external angles rounded bull nosed.
- .11 Use round bullnose edged tiles at termination of wall tile panels, except where panel abuts projecting surface or differing plane.
- .12 Provide PVC cap along top of ceramic tile base and at exposed edges of wall tile at exterior corners to terminate edges.
- .13 Install divider strips at junction of tile flooring and dissimilar materials.
- .14 Allow minimum 24 hours after installation of tiles, before grouting.
- .15 Install marble sills at entrances to shower areas.
- .16 Clean installed tile surfaces after installation and grouting cured.
- .17 Make control joints where indicated. Make joint width same as tile joints. Fill control joints with sealant in accordance with Section 07 92 10 - Joint Sealing. Keep building expansion joints free of mortar and grout.

3.2 FLOOR SEALER AND PROTECTIVE COATING

- .1 Apply in accordance with manufacturer's instructions.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 E3 – Shop Drawings.
- .2 D13 – Environmental Protection Plan.

1.2 REFERENCES

- .1 National Building Code of Canada (NBC).
- .2 Manitoba Building Code (MBC).
- .3 American Society for Testing and Materials (ASTM International)
 - .1 ASTM F1303-99, Specification for Sheet Vinyl Floor Covering with Backing.
- .4 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 E3 – Shop Drawings.
- .2 Submit duplicate 300 x 300 mm sample pieces of sheet material, 300 mm long base, and edge strips.

1.4 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section E5 – Additional Submittals.

1.5 EXTRA MATERIALS

- .1 Provide extra materials of resilient sheet flooring and adhesives in accordance with Section E5 – Additional Submittals.
- .2 Provide 10% of 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 site, upon completion of the work of this section.
- .6 Store where directed by the City’s representative.

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.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with D13 – Environmental Protection Plan.
- .2 Do not dispose of unused sealant and adhesive materials into landfill.
- .3 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .4 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.

Part 2 Products

2.1 MATERIALS

- .1 Sheet vinyl with backing:
 - .1 Backing: fibreglass composition.
 - .2 Pattern: smooth.
 - .3 Colour: selected by Contract Administrator from full product range.
 - .4 Thickness: 2.0 mm. (0.08 inches)
 - .5 Acceptable material: Medintech by Armstrong or City approved alternate.
- .2 Resilient base: continuous, top set, complete with premoulded end stops and external corners:
 - .1 Type: rubber.
 - .2 Style: cove.
 - .3 Thickness: 2.03 mm.
 - .4 Height: 101.6 mm.
 - .5 Lengths: cut lengths minimum 2400 mm.
 - .6 Colour: to be selected by Contract Administrator from full product range.
 - .7 Lengths: 2400 mm.
 - .8 Colour: to match flooring.
- .3 Primers and adhesives: of types recommended by resilient flooring manufacturer for specific material on applicable substrate, above, on or below grade.
- .4 Sub-floor 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.
- .5 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.
- .6 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 Old vinyl flooring tile to be removed by trained personnel (may contain asbestos).
- .4 Remove existing base.
- .5 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.
- .6 Prime concrete slab to resilient flooring manufacturer's printed instructions.

3.3 APPLICATION: FLOORING

- .1 Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.
- .2 Heat weld seams of linoleum sheet flooring in accordance with manufacturer's printed instructions.
- .3 As installation progresses and after installation roll flooring with 45 kg minimum roller to ensure full adhesion.
- .4 Cut flooring neatly around fixed objects.
- .5 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar.
- .6 Install metal edge strips at unprotected or exposed edges where flooring terminates.

3.4 APPLICATION: STAIRS

- .1 Install stair treads and riser in one piece for full width of stair.
- .2 Adhere over entire surface and fit accurately.
- .3 Install matching stair nosing at landings and edge of floor slab.

3.5 APPLICATION: BASE

- .1 Lay out base to keep number of joints at minimum.
- .2 Clean substrate and prime with one coat of adhesive.
- .3 Apply adhesive to back of base.
- .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
- .5 Install straight and level to variation of 1:1000.
- .6 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.
- .7 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles.
- .8 Use toeless type base where floor finish will be carpet, coved type elsewhere.
- .9 Install toeless type base before installation of carpet on floors.
- .10 Heat weld base in accordance with manufacturer's printed instructions.

3.6 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.

3.7 PROTECTION

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

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 E3 – Shop Drawings.
- .2 D13 – Environmental Protection Plan.
- .3 Section 05 50 00 – Metal Fabrications.

1.2 REFERENCES

- .1 National Building Code of Canada (NBC).
- .2 Manitoba Building Code (MBC).
- .3 Project Agreement, Schedule B – Project Requirements, Part 3 Design and Material Requirements, 3.15 Finishes.
- .4 Architectural Painting Specifications Manual, Master Painters Institute (MPI).
- .5 Systems and Specifications Manual, SSPC Painting Manual, Volume Two, Society for Protective Coatings (SSPC).
- .6 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
- .7 National Fire Code of Canada.

1.3 SUBMITTALS

- .1 Submit product data and manufacturer's installation/application instructions for paints and coating products to be used in accordance with E3 – Shop Drawings.
- .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with E3 – Shop Drawings.
- .3 Upon completion, submit records of products used. List products in relation to finish system and include the following:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour numbers.
 - .4 MPI Environmentally Friendly classification system rating.
 - .5 Manufacturer's Material Safety Data Sheets (MSDS).

1.4 SAMPLES

- .1 Submit samples in accordance with E3 – Shop Drawings.

- .2 Submit duplicate 200 x 300 mm sample panels of each paint or coating in colours, gloss/sheen and textures required to MPI Painting Specification Manual standards submitted on the following substrate materials:
 - .1 1 mm plate steel for finishes over metal surfaces.
- .3 When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.
- .4 Submit full range of available colours where colour availability is restricted.

1.5 SCOPE OF WORK

- .1 Furnish all materials and equipment and provide all labour required to complete the Painting and Protective Coatings Section according to the Project Agreement, including the shop and field Painting and finishing of building surfaces such as concrete, masonry, wood, metal, as well as specified items of mechanical, electrical and process equipment, piping, conduits, hangers, fittings, and pipe insulation covers.
- .2 All of the work to be carried out in accordance with the Painting Schedule which is included herein.
- .3 Include Special Coatings at containment areas identified on the drawings and finish schedules.
- .4 The following items and/or surfaces require no finish painting and/or finishing under this Section:
 - .1 Metalwork which is of stainless steel, aluminum, bronze, brass, copper, and plastic and/or that has a plated, polished, baked enamel or anodized finish, except where a paint finish is specifically called for.
 - .2 Prefinished PVC pipe coverings.
 - .3 Concrete floor surfaces.
 - .4 Prefinished fascias and flashings.
- .5 The following interior items are to be supplied with a shop applied finish and will therefore not require additional finish field painting under this Contract, other than field touch-up as required to make good finished surfaces damaged in transit or handling:
 - .1 Exhaust air fans.
 - .2 Motor Control Centre.
 - .3 Control equipment.
 - .4 Mechanical Equipment and pre-finished piping supports
 - .5 Prefinished metal and membrane flashings.
- .6 The work of other Sections which is required to be removed, and later replaced, for the proper execution and completion of the work of this Section such as finishing hardware, electrical fixtures, doors and other similar work, shall not be removed under this Section, but the appropriate trades shall be notified that they are required to carry out such work.

- .7 Read all other Sections very carefully to establish the exact extent of work under this Section.

1.6 QUALIFICATIONS

- .1 Work under this Section shall be executed by a company approved by the paint manufacturer and having a minimum of five years' proven quality experience in this work and having adequate equipment and skilled personnel to expediently complete the work of this Section in an efficient and workmanlike manner.

1.7 QUALITY ASSURANCE

- .1 Paint material container labels shall include the following information:
- .1 Manufacturer's name
 - .2 Type of paint
 - .3 Manufacturer's stock number
 - .4 Colour
 - .5 Instructions for reducing where applicable
 - .6 Label analysis and/or data sheets.

1.8 EXTRA MATERIALS

- .1 Submit maintenance materials in accordance with Section E5 - Additional Submittals.
- .2 Submit 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 Deliver to Contractor and store where directed.

1.9 DELIVERY, HANDLING AND STORAGE

- .1 Deliver paint materials in the original containers, with unbroken seals and labels intact.
- .2 Keep stored materials covered at all times and take necessary precautions against fire.
- .3 Arrange with the Contractor for properly enclosed and heated space, satisfactory to the Contract Administrator to be used as a paint shop. Paint materials shall be stored in a minimum temperature of 10°C, and maximum temperature not to exceed 30°C.
- .4 All containers used in storage, mixing and application of materials shall be clean and free of foreign materials and residue.

1.10 ENVIRONMENTAL CONDITIONS

- .1 Finishing shall not be carried out in areas where dust is being generated or in unclean or improperly ventilated areas.
- .2 No exterior painting shall be undertaken at temperatures lower than 10°C or immediately following rain, frost or dew.

□

- .3 No interior painting shall be undertaken at temperatures lower than 10°C, or on surfaces where condensation has or will form due to presence of high humidity and lack of adequate ventilation.
- .4 Do not apply varnish in temperatures lower than 18°C.
- .5 Comply with the manufacturer's recommendations in every respect as to environmental conditions under which paint and related materials may be applied.

1.11 PROTECTION

- .1 Cover or otherwise protect finished work of other trades and surfaces not being painted concurrently or not to be painted.
- .2 Work damaged due to a lack of or inadequate protection being provided shall be replaced to the satisfaction of the Contract Administrator, at no expense to the City.

1.12 COLOUR SCHEDULES

- .1 Provide colours in accordance with the colour schedule to be prepared by the Contract Administrator at a later date.
- .2 The Contract Administrator will select such colours as may be deemed necessary by him to complete the work, whether or not part of the manufacturer's standard range of colours.
- .3 Provide colours for pipe work to suit the identification standards of the client and standard industry practice.
- .4 Lighten or darken initial coats in multi-coat systems to help identify the extent of successive coats.

Part 2 Products

2.1 MANUFACTURERS

- .1 Paint materials listed in the latest edition of the MPI Approved Projects List are acceptable for use on this project and shall be products of a single manufacturer. Only qualified products with “Environmentally Friendly” rating are acceptable for use on this project.
- .2 The Special Coatings identified cannot be substituted without confirmation that the resistance to chemicals and concentrations for the likely exposure conditions are met or exceed those of the named products and systems.

2.2 MATERIALS

- .1 All materials used for painting and finishing work shall be exactly as hereinafter specified in brand and quality or approved equal in accordance to B7. No claim as to unsuitability or unavailability of any material specified, or his willingness to use same, or his inability to

produce first-class work with same will be entertained unless such claims are made in writing and submitted with the Tender.

- .2 Painting materials such as linseed oil, shellac, etc., shall be pure and of highest quality and approved by the Contract Administrator. They shall bear identifying labels on the containers.

Part 3 Execution

3.1 WORKMANSHIP

- .1 All finishes to be applied by skilled and experienced applicators over clean and dry surfaces only.
- .2 Paint shall be evenly spread and each coat well levelled, without runs, sags or other blemishes.
- .3 Stains shall be evenly applied, providing a uniform colour over all surfaces.
- .4 Excess paint which tends to fill up angles and profiles or small mouldings shall be neatly cut away and such work finished to the Contract Administrator's satisfaction.
- .5 Finishes of each type shall be uniform as to sheen, colour, texture and thickness.
- .6 Doors and drawers shall move freely and easily after painting and finishing.
- .7 Painting and finishing work shall consist of at least the number of coats herein specified as required to produce a finish of even colour and texture to the Contract Administrator's approval.
- .8 This Specification and Painting Schedule is to be read in conjunction with the manufacturer's printed instructions and recommendations for the particular product. Unless noted otherwise, surface preparation is to comply with the paint manufacturer's recommendations.

3.2 INSPECTION

- .1 Examine surfaces scheduled to receive paint and finishes for conditions that will adversely affect execution, permanence or quality of work and which cannot be put into an acceptable condition through preparatory work as included in Clause 3.3 - Preparation of New Surfaces, and report any discrepancies or unacceptable surfaces to the Contract Administrator. If any such defective work is painted over, such areas shall be removed and repaired to the satisfaction of the Contract Administrator at no extra expense to the City.
- .2 Do not proceed with painting application until conditions are suitable.
- .3 Material shall not be applied on surfaces where moisture content is in excess of 12 percent, as measured on a moisture meter.

- .4 All work where a coat of material has been applied must be inspected and approved by the Contract Administrator before application of the succeeding coat; otherwise no credit for the coat applied will be given, and the Painter shall recoat the work in question.
- .5 The painting operations of the Contract are subject to inspections by a representative of the paint manufacturer.

3.3 PREPARATION OF NEW SURFACES

- .1 General:
 - .1 Preparation for this work shall consist of cleaning off loose material, removing all dust, dirt, grease, rust and other extraneous matter which would impair the work, and leaving all surfaces clean and suitable for the application of the materials herein specified.
 - .2 All work shall be rubbed or sanded smooth before painting and/or finishing is commenced.
- .2 Ferrous metal surfaces:
 - .1 Remove dirt and grease with mineral spirits and wipe dry with clean cloths.
 - .2 Remove rust, mill scale and defective paint down to sound surfaces or bare metal using scraper, sandpaper or wire brush as necessary. Grind, disc, sand, etc., if necessary to remove shoulders at edge of sound paint to prevent them from photographing through finish coats.
 - .3 Touch up all bare metal and damaged shop coats with specified shop coat primer.
- .3 Steel and iron (including both structural and miscellaneous steel):
 - .1 Prepare steel surfaces in accordance with SSPC Standard SP6. Steel surfaces shall not be blasted when surface temperature is less than 3°C above the dew point, when relative humidity is greater than 85 percent or when there is a possibility that the blasted surface will be subject to wetting before the first coat of primer can be applied. Surfaces must be blown, wiped or vacuumed free of blasting abrasive before the surface is primed.
 - .2 All metalwork primed under other Sections shall be inspected prior to painting and all worn and scraped areas spot primed before applying finishing coat. After installation, thoroughly clean weld seams, abrasions and other small defects of dirt and grease with a solvent (CAN/CGSB-1.4 mineral spirits) and wipe dry with a clean cloth prior to painting as specified.
- .4 Galvanized metal surfaces:
 - .1 Remove dirt and grease with mineral spirits and wipe dry with clean cloths.
- .5 Wood: sandpaper to smooth and even surface and then dust off. After priming has been applied, thoroughly fill nail and other holes and cracks with plastic wood or putty. All knots or sap streaks shall be shellacked.
- .6 Concrete: surfaces must be thoroughly cleaned of dirt, grease, dust, loose particles, cement or other foreign material before applying paint. Walls which are spotted with dirt or grease must first be cleaned using suitable solvent, after which traces of acids or chemicals shall be

removed. Special attention must be paid to concrete surfaces which may have become thoroughly dried out, or in which the free lime may not have been entirely neutralized before paint is to be applied. Such surfaces shall be washed or painted with a solution composed of 0.3 kg zinc sulphate per litre of water. Any crystalline residue on drying must be well brushed off after which the surfaces shall be painted with an approved primer-sealer. Formed and cast in place concrete vertical surfaces or horizontal soffits that are to be finish painted are to receive a sack rub with diluted cement paste to fill small voids and minor cracks prior to paint application.

- .7 Drywall: All scratches, cracks, abrasions, etc., in drywall surfaces to be cut out as required and made good with drywall patching compound. All patches to be dry, sanded down and properly sealed before application of the prime coat. If the prime coat does not dry to a uniform sheen over the entire surface, spot prime the areas that indicate suction before applying the finish coat.

3.4 APPLICATION

- .1 Apply paint materials with suitable brushes, rollers or spraying equipment.
- .2 Spray work may be acceptable for surfaces of structural steel and underside of steel deck within building only. Roller application of paint is acceptable over concrete block surfaces. All other surfaces including all natural or stained finishes shall have paint applied by brush.
- .3 Should spray work be permitted, take every precaution necessary to preserve the health of the employees by complying with regulations issued by Territory or Federal Governments governing the use of materials, prejudicial to the health of the workmen.
- .4 Spreading rate of application shall not exceed that as recommended by the paint manufacturer for the surface involved.
- .5 Keep painting equipment (brushes, rollers, etc.) clean, dry, free from contaminants and suitable for finish required.
- .6 Comply with product manufacturer's recommendations for drying time between succeeding coats.
- .7 Vary slightly the colour of successive coats.
- .8 Sand and dust between each coat to remove all visible defects.
- .9 Fillers shall be coloured, if required. They shall be well worked into grain of wood and before set shall be wiped clean, unless otherwise specified.
- .10 Tops of doors, trim fittings and all projecting ledges, both above and below sight lines, shall be finished as specified for surrounding work.
- .11 Bottoms, edges and tops of all doors shall be finished after fitting.
- .12 Where thinning is necessary, only the products of the manufacturer furnishing the paint and recommended for the particular purpose will be allowed. All thinning shall be done strictly in

accordance with the manufacturer's instructions as well as with the full knowledge and approval of the Contract Administrator.

3.5 INTERIOR PAINTING

- .1 Interior work to include the following:
 - .1 On areas where painting or finishing is indicated on the Drawings, all surfaces and objects within the room or area to be painted or finished, except where expressly indicated or specified otherwise.
 - .2 In areas indicated as unfinished on the Drawings, painting is not required, with the exception of all wood and corrosive metal surfaces (including mechanical and electrical equipment, piping, conduits and fittings, as well as all pipe insulation covers).
- .2 All other Sections of these Specifications shall be examined to ascertain the extent of shop and priming coats which will be applied under such Sections. Priming and back-painting of finished items of exterior and interior woodwork and of items to be painted or finished which are not specified to be primed under other Sections shall be executed under this Painting Section as herein specified.

3.6 EXTERIOR PAINTING

- .1 Generally to include wood, ferrous, primed or galvanized metals forming part of the building, roof-mounted equipment, gas piping, ductwork and all other surfaces normally requiring painting.
- .2 The surfaces of all steel connections that are exposed to atmosphere and become inaccessible at the completion of the project shall receive two additional field coats of paint after erection of steel.

3.7 PRIMING

- .1 Concealed parts of all wood cabinets and other millwork shall be back-primed before placing.
- .2 In general, the priming of items of metal is specified as a shop coat. All wood or metal to be painted, varnished, stained or enameled and not specified to have a shop coat shall be primed at the site, in accordance with the recommendations of the coating manufacturer and to the Contract Administrator's approval.
- .3 All paint for priming coats shall be well brushed out and forced into grain of wood and into all cracks and crevices on metal. Priming coats to be evenly spread and shall completely cover all surfaces.
- .4 Screw heads, holes and other defects in metal-work shall be neatly filled with mineral filler. Nail holes, cracks and other defects in work, other than metalwork, shall be neatly puttied to match finish intended. All such work shall be carried out after the priming coat is dry and before the second coat is applied.

- .5 All exterior wood surfaces which will be covered by metal or other light materials will be supplied pressure-treated with wood preservative, and will not require any additional painting.
- .6 In no case shall full gloss paint or enamel be used as an undercoat, except as hereinafter specified under particular items.

3.8 MECHANICAL AND ELECTRICAL EQUIPMENT

- .1 Paint all exposed conduits, pipes and other mechanical and electrical equipment which occurs in finished areas. Colour and texture shall match adjacent surfaces, unless otherwise stipulated.
- .2 Paint all piping, conduits, ductwork and all other unfinished equipment in Mechanical and Electrical Areas. In all other unfinished areas, leave equipment, piping, conduits, etc. in their original finish, but touch up all scratches and marks on all factory-finished equipment.
- .3 Do not paint flexible duct connections.
- .4 Paint both sides and all edges of plywood backboards for electrical equipment before installing backboards and mounting equipment on them. Touch up at the completion of the job. Leave equipment on the backboards in their original finish (except for touch-up as required) and paint conduits, mounting accessories and other unfinished items.
- .5 Also paint all electrical exterior light standards and other equipment as scheduled and/or required.

3.9 RE-TOUCHING

- .1 Make a close inspection of all surfaces painted prior to completing this work. Ensure that all surfaces painted are properly and perfectly re-touched where damaged by workmen before removing their equipment.
- .2 The whole job shall be turned over to the City in perfect condition, free of all spattering, finger marks, rust, water marks, scratches, blemishes, etc.

3.10 CLEANING

- .1 Sweep rooms to be worked in broom clean, and maintain the areas being worked in, in this condition while work of this trade is being done.
- .2 All oily rags, waste, etc. must be removed from the building every night, as under no circumstances will they be allowed to accumulate.
- .3 On completion, all spots, stains and other disfigurement resulting from this work shall be removed and the premises left clean, and free from all dirt and debris.

3.11 PAINTING SYSTEMS

- .1 Sealer-primer shall be as recommended by paint manufacturer for the particular application and finish coat. Touch up shop primer as required.
- .2 Materials and systems used in Painting and Protective Coating System shall conform to Pittsburgh Paint Company, or approved equal, unless otherwise specified.
- .3 The following coats listed herein shall be applied to all surfaces which are to receive a painted or finished surface as called for on the Drawings, or specified herein:

3.12 SPECIAL COATING SYSTEM

- .1 100% solids, high performance, novolac epoxy lining system.
- .2 Install in strict accordance with manufacturer's instructions for concrete curing, limitations on moisture content, soundness of substrates, installation and curing temperatures, and special protection of workers during the installation.
- .3 Remove laitance and formwork release compound by mechanical means including abrasive blasting and scarifying.
- .4 Mask adjacent surfaces to provide neat uniform transition.

3.13 PAINTING AND PROTECTIVE COATING SYSTEMS:

Legend:

DFT Dry Film Thickness
SP Shop Prime
FP Field Prime
FF Field Finish
TU Touch Up

<u>Paint System Number</u>	<u>Supplier</u>		<u>Description</u>
1	Pittsburgh Paint	FP1	6-7 Blockfiller 6-2 Primer Sealer DFT - Sufficient to Fill Voids
		FF1	95-245/95-249 Rapid Coat Epoxy DFT - 130-180 Micron

		FP2	95-1/95-98 Aquapon Epoxy DFT - 75-125 Micron
2	Pittsburgh Paint	FP1	6-2 Primer Sealer
		FF1	78-line Latex Eggshell
		FF2	78-line Latex Eggshell
3	Pittsburgh Paint	FP1	6-7 Blockfiller 6-2 Primer Sealer DFT - Sufficient to Fill Voids
		FF1	7-800 Industrial Enamel DFT - 50 Micron
		FF2	7-800 Industrial Enamel DFT - 50 Micron
4	Pittsburgh Paint	SP1	995-245/95-249 Rapid Coat Epoxy DFT - 130-180 Micron
		FP1	97-680 Multiprime DFT - 50 Micron
		FF1	95-245/95-249 Rapid Coat Epoxy Epoxy DFT - 130-180 Micron
		FF2	95-1/95-98 Aquapon Epoxy 75-125 Micron
Note	1.		Galvanized steel to receive an Oakite wash (solution is 1 part Oakite Wash to 3 parts water). Allow to remain in contact for 3 to 6 minutes, remove with plenty of clear water and allow to dry, then prime.
5	Pittsburgh Paint	FP1	95-144/97-149 PittGuard DTR
		FP2	97-144/97-149 PittGuard DTR (Total) DFT - 250-380 Micron
6	Pittsburgh	FP1	97-680 Multiprime

	Paint		DFT - 37-50 micron
		FF1	7-800 Industrial Enamel DFT - 50 Micron
		FF2	7-800 Industrial Enamel DFT - 50 Micron
Note:	.1	Galvanized steel to receive an Oakite wash (solution is 1 part Oakite Wash to 3 parts water). Allow to remain in contact for 3 to 6 minutes, remove with plenty of clear water and allow to dry, then prime.	
7	Pittsburgh Paint	FP1	6-6 Enamel Undercoat DFT - 50 Micron
		FF1	29-110 Alkyd Semi DFT - 37-50 Micron
		FF2	29-110 Alkyd Semi DFT - 37-50 Micron
8	Pittsburgh Paint	FP1	95-245/95-249 Rapid Coat Epoxy DFT - 130-180 Micron
		FF1	95-1/95-98 Aquapon Epoxy
Note:	.1	Galvanized steel to receive an Oakite wash (solution is 1 part Oakite Wash to 3 parts water). Allow to remain in contact for 3 to 6 minutes, remove with plenty of clear water and allow to dry, then prime.	
9	Pittsburgh	SP1	97-680 Multiprime DFT - 50 Micron
		FP1	97-680 Multiprime DFT - 50 Micron
		FF1	7-800 Industrial Enamel DFT - 50 Micron
		FF2	7-800 Industrial Enamel DFT - 50 Micron
10	Pittsburgh	SP1	97-948/97-949 All Weather Epoxy DFT - 175 Microns

*FF1 97-948/97-949 All Weather Epoxy
DFT - 175 Microns

FF2 97-948/97-949 All Weather Epoxy
DFT - 175 Microns

** Mid-coat can be tinted to provide a contrast between coats for inspection services*

11 Pittsburgh Paint
FP1 6-2 Primer Sealer
FP2 6-2 Primer Sealer
DFT - 37-50 Micron

FF1 7-800 Industrial Enamel
DFT - 50 Micron

FF2 7-800 Industrial Enamel
DFT - 50 Micron

12 Pittsburgh Paint
SP1 97-680 Multiprime
DFT - 50-75 Micron

FP1 97-680 Multiprime
DFT - 50-75 Micron

FF1 97-144/97-149 PittGuard Epoxy
DFT - 150 Micron

FF2 97-144/97-149 PittGuard Epoxy
DFT-150 Micron

3.14 PAINTING AND PROTECTIVE COATING SCHEDULE

- .1 Concrete/masonry surfaces and special coatings: Refer to Room Finish Schedules.
- .2 Metal surfaces: paint all surfaces unless noted otherwise, refer to Room Finish Schedule for architectural finishes.

<u>Location or Item</u>	<u>Exposure</u>	<u>Painting and Protective Coating System</u>
1. Hollow metal doors and frames	Interior and Exterior	No. 9
2. Steel equipment and pipe supports and hangers	Interior and Exterior	No. 4
3. Galvanized steel surfaces (including doors, frames, ducts and trays)	Interior	No. 6
4. Structural steel components of building and miscellaneous exposed ferrous metal structures:	Interior and Exterior	No. 12
5. Wood: Equipment mounting boards	Interior	No. 7
6. Insulation: Outside surfaces of insulated piping and ducts unless concealed	Interior	No. 11
7. Concrete: Interior surfaces of masonry and concrete where identified in Finish Schedules	Interior	No. 3
8. Gypsum Board Interior drywall	Interior	No. 2
9. Steel handrail, guards, ladders	Interior and Exterior	No. 9

- | | | |
|---|-----------------------|-------|
| 10. Steel equipment and pipe supports and hangers | Interior and Exterior | No. 4 |
| <i>Unless pre-finished by supplier with equivalent coating.</i> | | |
| 11. Aluminum surfaces in contact with concrete or masonry | | No. 5 |

END OF SECTION