

Part 1 General

1.1 SECTION INCLUDES

- .1 Gypsum board and joint treatment.
- .2 Backer board.
- .3 Metal channel ceiling framing.

1.2 RELATED SECTIONS

- .1 Section 06 10 13 - Wood Blocking and Curbing.
- .2 Section 07 21 13 - Board, Semi Rigid & Acoustic Insulation.
- .3 Section 07 21 19 – Foamed-in-Place Insulation.
- .4 Section 07 84 00 - Firestopping.
- .5 Section 09 30 10 - Ceramic Floor & Wall Tiling.

1.3 REFERENCES

- .1 ANSI A118.9-1999(R2005) - Cementitious Backer Units.
- .2 ASTM C553, Type 1 - Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
- .3 ASTM C1104 - Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation.
- .4 ASTM C1338 - Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
- .5 ASTM E84 - Surface Burning Characteristics of Building Materials.
- .6 ASTM C475/C475M-02 (R2007) - Joint Compound and Joint Tape for Finishing Gypsum Board.
- .7 ASTM C514-04(2009)e1 - Nails for the Application of Gypsum Board.
- .8 ASTM C557-03(2009)e1 - Adhesives for Fastening Gypsum Wallboard to Wood Framing.
- .9 ASTM C645-09a - Non-Structural Steel Framing Members.
- .10 ASTM C754-09a - Installation of Steel Framing Members to Receive Screw-Attached Gypsum Board.
- .11 ASTM C840-08 - Application and Finishing of Gypsum Board.

- .12 ASTM C954, 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.
- .13 ASTM C1002-07 - Steel Self-Piercing, Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .14 ASTM C1047-09 - Accessories for Gypsum Wallboard and Gypsum Veneer Base.
- .15 ASTM C1177/C1177M, Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
- .16 ASTM C1178/C1178M, Specification for Glass Mat Water Resistant Gypsum Backing Board.
- .17 ASTM C1280, Specification for Application of Gypsum Sheathing Board.
- .18 ASTM C1278/C1278M-07a - Fiber-Reinforced Gypsum Panel.
- .19 ASTM C1325-08b - Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units.
- .20 ASTM C1396/C1396M-09a - Gypsum Board.
- .21 ASTM E90-09 - Test Method for Laboratory Measurement of Airborne-Sound Transmission Loss of Building Partitions and Elements.
- .22 CAN/CGSB 51.34, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .23 CAN/CGSB-71.25-M88 - Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .24 CAN/ULC-S101-07 - Methods of Fire Endurance Tests of Building Construction and Materials.
- .25 CAN/ULC-S102-07 - Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
- .26 CAN/ULC-S702-09 - Thermal Insulation Mineral Fibre for Buildings.
- .27 GA-214-07 (Gypsum Association) - Recommended Levels of Gypsum Board Finish.
- .28 GA-216-07 (Gypsum Association) - Application and Finishing of Gypsum Panel Products.
- .29 GA-600-09 (Gypsum Association) - Fire Resistance Design Manual.
- .30 GA-801-07 (Gypsum Association) - Handling and Storage of Gypsum Panel Products: A Guide for Distributors, Retailers, and Contractors.
- .31 UL - Fire Resistance Directory.
- .32 ULC - Fire Resistance Directory.

- .33 Association of the Wall and Ceilings Industries International (AWEI)

1.4 SYSTEM DESCRIPTION

- .1 Acoustic Attenuation for identified Interior Partitions: STC as indicated on Drawings.

1.5 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submittal Procedures.
- .2 Product Data:
 - .1 Provide data on steel stud framing gypsum board, backer board, and joint tape.
- .3 Shop Drawings:
 - .1 Indicate special details associated with acoustic seal for openings.

1.6 QUALITY ASSURANCE

- .1 Perform Work in accordance with ASTM C840, GA-214, GA-216, and GA-600. Maintain one (1) copy on Site.
- .2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

1.7 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Deliver materials in original packages, containers or bundles bearing manufacturer's brand name and identification.
- .3 Store materials inside, level, under cover. Keep dry. Protect from weather, other elements and damage from construction operations and other causes.
- .4 Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.

1.8 ENVIRONMENTAL REQUIREMENTS

- .1 Ambient Conditions:
 - .1 Maintain temperature between 10 degrees C minimum and 21 degrees C maximum, 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 Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

Part 2 Products

2.1 MANUFACTURERS

- .1 Substitutions: Refer to Bid Opportunity.

2.2 FRAMING MATERIALS

- .1 Studs and Tracks: Specified in Section 09 22 16.
- .2 Furring, Framing, and Accessories: Specified in Section 09 22 16 - Non-Structural Metal Stud Framing.
- .3 Fasteners: ASTM C1002.
- .4 Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- .5 Adhesive: CAN/CGSB-71.25, ASTM C557, GA-216.
- .6 Contractor has the option of using either a proprietary suspension system or a three-component direct-hung system to suspend gypsum board ceilings.
 - .1 Cable suspension system:
 - .1 Standard of Acceptance:
 - .1 CGC Drywall Suspension System - direct hung drywall system.
 - .2 Approved method using steel studs and channels.
 - .2 Three Component System:
 - .1 (1 ½ inches x ½ inches x 12") 16 gauge channel suspended by 9 gauge (minimum) hanger wire at a maximum of 48" o.c.
 - .2 Tie the furring bar to the channel at (48 inches) o.c.
 - .3 The perimeter support shall be a (1 ½ inches x 1 ¼ inches) 25 gauge galvanized angle.
 - .4 The gypsum board shall be 16mm (5/8 inches) unless noted otherwise.

2.3 GYPSUM BOARD MATERIALS

- .1 Standard Gypsum Board: ASTM C1396/C1396M, paper-faced; 1 220 mm (48 inches) wide, maximum available length in place; tapered edges, ends square cut.
 - .1 Fire rated core (Type X), 16 mm (5/8 inch) thick.
 - .2 Abuse Resistant (Type X), 16 mm (5/8 inch) thick.
 - .1 Product: VHI abuse resistant drywall panel (Fiberock Brand).
- .2 Fibreglass Mat Gypsum Backer Board: ASTM C1178; ASTM D6329, EPA 12-week protocol; water-resistant treated core with glass mat coating, 16 mm thick; maximum available size in place; smoothed edges, ends square cut.
 - .1 Product: DensShield; Manufactured by Georgia-Pacific Gypsum LLC.

2.4 ACCESSORIES

- .1 Acoustic Insulation: As specified in Section 07 21 13 – Board, Semi Rigid & Acoustic Insulation.
- .2 Fire Rated Insulation: as specified in Section 07 21 13 - Board, Semi Rigid & Acoustic Insulation.
- .3 Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
- .4 Corner Beads: ASTM C1047, GA-216, metal commercial grade sheet steel with G90 Zinc finish perforated and knurled 32mm (1 ¼ inch) flanges; one piece length per location.
- .5 Casing Beads: ASTM C1047, GA-216, metal, G90 Zinc finish, perforated flanges; one piece length per location.
 - .1 Standard of Acceptance:
 - .1 Product: D-100; Manufactured by Bailey Metal Products Ltd.
- .6 Edge Trim: ASTM C1047, GA-216; Type U casing bead.
- .7 Resilient Channels: 0.5mm (25ga.) base steel thickness galvanized steel.
 - .1 Standard of Acceptance:
 - .1 Product: RC-1 resilient channel; Manufactured by UGC.
- .8 Channel Trim: galvanized steel.
 - .1 Standard of Acceptance:
 - .1 Product: D-4411; Manufactured by Bailey Metal Products Ltd.
- .9 Drywall metal trim: galvanized steel.
 - .1 Standard of Acceptance:
 - .1 Product: D-200; Manufactured by Bailey Metal Products Ltd.
- .10 Angle Framing Trim: 32 x 38mm (1 ¼ inch x 1 ½ inch) 25 ga.
 - .1 Standard of Acceptance:
 - .1 Product: D-700; Manufactured by Bailey Metal Products Ltd.
- .11 Flexible Column Trim: 14mm (9/16 inch) flexible PVC trim angle.
 - .1 Standard of Acceptance:
 - .1 Product: Flex-Grid Angle; Manufactured by Trim-Tex.
 - .2 Uniflex®.
- .12 Acoustic sealant: to CGSB 19-GP-21M, non-hardening, non-skinning, for use in conjunction with gypsum board.
 - .1 Standard of Acceptance:
 - .1 Product: Acoustical Sealant; Manufactured by Tremco.
- .13 Sealants: Type in accordance with Section 07 92 00 - Joint Sealing.

- .14 Polyethylene: to CAN 2-52.33-M77, Type 2. Minimum 0.15mm (6mil) thickness.
- .15 Insulating strip: rubberized, moisture resistant, 3mm (1/8") thick cork or closed cell neoprene strip, 12mm (1/2") wide, with self-sticking permanent adhesive on one face; lengths as required.
- .16 Track sill gasket: 3mm (1/8") thick semi-rigid fiberglass strips or closed cell foam.
- .17 Isolation hanger: ARH-1, high tensile rubber 11 gauge interlocked wire, size for 5mm (3/16 inch) deflection with maximum load. Available at Tri-Tec Drywall Services.
- .18 Channel Studs: 18ga. channel studs at corners as backing for corner guards.
- .19 Joint Materials: ASTM C475, GA-216, compatible with products specified.
- .20 Reinforcing tape, adhesive, and water.
- .21 Joint compound: Asbestos-free dust-controlled.
 - .1 Standard of Acceptance:
 - .1 SHEETROCK® All Purpose Joint Compound.
 - .2 SHEETROCK® Topping Joint Compound.
 - .3 DURABOND 90® Compound.
 - .4 SHEETROCK MC® Ready-to-Use.
 - .5 SHEETROCK® First Coat Paint primer/sealer.
- .22 Protect ready-to-use compounds from freezing and extreme heat. Product that has been frozen is to be discarded.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 71 00: Verify existing conditions before starting work.
- .2 Verify that Site conditions are ready to receive work and opening dimensions are as indicated on shop drawings and as verified by Contractor.

3.2 INSTALLATION

- .1 Install in accordance with manufactures instructions.
- .2 Components shall be lifted with suitable devices.
- .3 Components shall be installed plum and true. Shim where necessary.
- .4 Fasten components with self drilling, self tapping bugle head screws through face or back as indicated on shop drawings.
- .5 Where components are suspended, use as a minimum 12 gauge galvanized steel wire and the suspension points indicated on the shop drawings.

- .6 Framing, hangers etc. as specified for Gypsum Board.
- .7 Butt joints are to be adhered together using “Liquid Nail” or equivalent.
- .8 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.
- .9 Do application of gypsum sheathing in accordance with ASTM C1280.
- .10 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C840 except where specified otherwise.
- .11 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .12 Install work level to tolerance of 1:1200.
- .13 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, and grilles.
- .14 Install 19 x 64 (3/4 x 2 1/2 inch) mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .15 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .16 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.
- .17 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.
- .18 Furr openings and around built in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .19 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .20 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm (6 inches) on centre using contact adhesive for full length.
- .21 Install casing beads around perimeter of suspended ceilings.
- .22 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .23 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
- .24 Install shadow mould at gypsum board/ceiling juncture as indicated. Minimize joints; use corner pieces and splicers.

- .25 Construct control joints of preformed units two back to back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .26 Provide continuous polyethylene dust barrier behind and across control joints.
- .27 Locate control joints where indicated, at changes in substrate construction, at approximate 10 m (30 ft) spacing on long corridor runs and at approximate 15 m (45 ft) spacing on ceilings.
- .28 Install control joints straight and true.
- .29 Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous dust barrier.
- .30 Install expansion joint straight and true.
- .31 Install cornice cap where gypsum board partitions do not extend to ceiling.
- .32 Fit cornice cap over partition, secure to partition track with two rows of sheet metal screws staggered at 300 mm (12 inches) on centre.
- .33 Splice corners and intersections together and secure to each member with 3 screws.
- .34 Install access doors to electrical and mechanical fixtures specified in respective sections. Rigidly secure frames to furring or framing systems.
- .35 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.
- .36 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with Association of the Wall and Ceiling Industries (AWCI) International Recommended Specification on Levels of Gypsum Board Finish:
 - .1 Levels of finish:
 - .1 Level 0: No taping, finishing or accessories required.
 - .2 Level 1: Embed tape for joints and interior angles in joint compound. Surfaces to be free of excess joint compound; tool marks and ridges are acceptable.
 - .3 Level 2: Embed tape for joints and interior angles in joint compound and apply one separate coat of joint compound over joints, angles, fastener heads and accessories; surfaces free of excess joint compound; tool marks and ridges are acceptable.
 - .4 Level 3: Embed tape for joints and interior angles in joint compound and apply two separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
 - .5 Level 4: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
 - .6 Level 5: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener

heads and accessories; apply a thin skim coat of joint compound to entire surface; surfaces smooth and free of tool marks and ridges.

- .37 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.
- .38 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.
- .39 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .40 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
- .41 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.
- .42 Mix joint compound slightly thinner than for joint taping.
- .43 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.
- .44 Allow skim coat to dry completely.
- .45 Remove ridges by light sanding or wiping with damp cloth.
- .46 Provide protection that ensures gypsum drywall work will remain without damage or deterioration at time of substantial completion.

3.3 CEILING FRAMING INSTALLATION

- .1 Install to ASTM C754 and GA-216.
- .2 Coordinate location of hangers with other work.
- .3 Install ceiling framing independent of walls, columns, and above ceiling work.
- .4 Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 600 mm (24 inches) past each end of openings.
- .5 Laterally brace entire suspension system.
- .6 Contractor has the option of using either a proprietary suspension system or a three-component direct-hung system to suspend gypsum board ceilings.
 - .1 Cable suspension system: Erect hangers and runner channels or suspended gypsum board ceilings where specifically noted to CSA A82.31M. Approved method using steel studs and channels.
 - .2 Three Component System:
 - .1 (1 ½ inches x ½ inches x 12') 16 gauge channel suspended by 9 gauge (minimum) hanger wire at a maximum of 48" o.c.

- .2 Tie the furring bar to the channel at (48 inches) o.c.
- .3 The perimeter support shall be a (1 ½ inches x 1 ¼ inches) 25 gauge galvanized angle.
- .4 The gypsum board shall be 16mm (5/8 inches) unless noted otherwise.
- .7 Construct ceilings to a tolerance of 1:1200.
- .8 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, and grilles.
- .9 Fire and sound rated partitions to be continuous to underside of roof structure above suspended or furred ceiling.
- .10 Do not erect ceiling suspension system until anchors, blocking, sound or fire barriers, electrical, and mechanical work above ceiling have been inspected and approved by Contract Administrator.
- .11 Ensure suspended system is co-ordinated with location of related components.
- .12 Support suspension system main runners with hanger wire secured to the building's structural system. Do not attach suspension system to ductwork or building services. Review mechanical drawings for areas requiring special attention. Completed assembly to support super-imposed loads, such as lighting fixtures, diffusers, and grilles.
- .13 Support fluorescent light fixtures with supplemental hangers within 150mm (6 inches) of each corner and at maximum 600mm (24 inches) around perimeter.
- .14 Provide isolation hangers where noted.

3.4 ACOUSTIC ACCESSORIES INSTALLATION

- .1 Install resilient channels where scheduled for acoustically rated walls and floor construction.
- .2 Erect drywall resilient furring transversely across studs joists, spaced maximum 600 mm (24 inches) on centre and not more than 150 mm (6 inches) from ceiling/wall juncture.
 - .1 Secure channels to each support with 38mm (1-3/4 inch) Type W or 25 mm (1 inch) Type S screws.
 - .2 Attach gypsum panels to resilient channels with 25 mm (1 inch) Type S screws at 300mm (12 inch) on centre, and to joists with 38 mm (1 3/4 inch) Type W screws.
- .3 Install 75 mm (3 inches) continuous strip of 13 mm (1/2 inch) gypsum board along base of partitions where resilient furring installed.
- .4 Maximum weight of overlaid insulation:
 - .1 6.5 kg/sq m (1.3 lbs/sq ft) for 13 mm (1/2 inch) panels on framing spaced 600 mm (24 inch) on centre.
 - .2 11 kg/sq m (2.3 lbs/sq ft) for 13 mm (1/2 inch) panels on framing at 400 mm (16 inch) on centre.

- .3 11 kg/sq m (2.3 lbs/sq ft) for 16 mm (5/8 inch) panels and framing at 600mm (24 inch) on centre.
- .5 Install acoustic sealant within partitions in accordance with manufacturer's written instructions.
- .6 Erect accessories straight, plumb or level, rigid, and at proper plane. Use full-length pieces where practical. Make joints tight, accurately aligned, and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150mm (6") o.c. or using contact adhesive for full length.
- .7 Install casing beads around perimeter of suspended ceilings.
- .8 Install channel trim where gypsum board butts against surfaces having no trim and at control joints. Cement and sand to finish.
- .9 Install insulating strips continuously at edges of gypsum board or casing beads abutting metal window or exterior doorframes, to provide thermal break.

3.5 GYPSUM BOARD INSTALLATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.
- .2 Apply gypsum board to wood or metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm (12 inches) on centre.
- .3 Apply water resistant gypsum board where wall tiles to be applied and adjacent to slop sinks. Apply water resistant sealant to edges, ends, cut outs which expose gypsum core and to fastener heads. Do not apply joint treatment on areas to receive tile finish.
- .4 Apply 13 mm (1/2 inch) diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut outs around electrical boxes, ducts, and in partitions where perimeter sealed with acoustic sealant.
- .5 Install ceiling boards in direction that will minimize number of end butt joints. Stagger end joints at least 250 mm.
- .6 Install gypsum board on walls vertically to avoid end butt joints. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs, except where local codes or fire rated assemblies require vertical application.
- .7 Install gypsum board with face side out.
- .8 Do not install damaged or damp boards.
- .9 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.
- .10 Erect single layer standard gypsum board horizontal or vertical orientation (whichever results in fewest ends), with ends and edges occurring over firm bearing.

- .11 Use screws when fastening gypsum board to wood furring or framing.
- .12 Erect exterior gypsum soffit board perpendicular to supports, with staggered end joints over supports.
- .13 Treat cut edges and holes in moisture resistant gypsum board with sealant.
- .14 Place control joints consistent with lines of building spaces as indicated or required. Confirm all locations with Contract Administrator.
- .15 Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
- .16 Install backing board over metal studs, plywood sheet, or gypsum board to manufacturer's written instructions.
- .17 Unless noted otherwise on wall schedule, gypsum board to be installed to underside of structure and fit tight to all construction penetrating board. In fire rated assemblies seal with fire-stop material and in sound rated assemblies seal with acoustic caulking.
- .18 For acoustic separation between rooms, all back to back electrical boxes (boxes serving rooms on opposite side of the same wall) shall be located by the electrical Contractor so that they are at least 640mm (2'-2 inches) apart and separated by (1) full stud space. To acoustically separate back to back electrical boxes which cannot be horizontally separated by min. 640mm (2'-2 inches) (1 full stud space), attach double layer 16 GWB, from floor to 1200mm (4'-0 inches) high, to side of stud between boxes. Seal with acoustic caulk on bottom and sides.

3.6 PROPRIETARY BACKER BOARDS

- .1 Install proprietary paperless exterior sheathing, wallboards, cement board and tile backer boards in accordance with the manufacturer's technical literature.

3.7 ACCESS DOORS

- .1 Install access doors to electrical and mechanical fixtures specified in respective Sections and to the approval of the Contract Administrator for location.
- .2 Rigidly secure frames to furring or framing systems.

3.8 JOINT TREATMENT

- .1 Finish in accordance with ASTM C840 and GA-214, Level 5 for all areas exposed to view and Level 2 for all areas not exposed.
- .2 Feather coats on to adjoining surfaces so that camber is maximum 0.8 mm (1/32 inch).
- .1 Fill and finish joints and corners of cementitious backing board.
- .2 Control Joints:
 - .1 Construct control joints of preformed units or (2) back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.

- .2 Provide continuous 150mm (6 inches) wide polyethylene dust barrier behind and across control joints.
 - .3 Locate control joint at approximate 10000mm (30') spacing on long runs, at approximate 15000mm (45') spacing on ceilings or where indicated on drawings. Locate control joints over door openings aligned with corner of doorframe and carry up to top of partition.
 - .4 Install control joints straight and true.
 - .5 Install expansion joint covers at Bridge connection in accordance with manufacturer's instructions. Blend into wall.
- .3 Taping and Filling:
- .1 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.
 - .2 Finish corner beads, control joints, and trim as required with (2) coats of joint compound and (1) coat of taping compound, feathered out onto panel faces.
 - .3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after painting is completed.
 - .4 Tape and fill joints above ceiling line to underside of structure in all walls and to floor line for proper installation of cove base.
 - .5 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
 - .6 Completed installation to be smooth, level or plumb, free from waves and other defects, and ready for painting or other finish coatings including fabric or vinyl wall coverings.
 - .7 Apply a continuous skim coat at all partitions located directly below valence lighting or perpendicular to exterior windows for a length of 10000mm (30') to provide a smooth surface free of joints and imperfections.
 - .8 Sanding not required behind permanent fixtures and above finished ceilings.
 - .9 Apply a continuous skim coat of topping joint compound over the FibreBond® panels to provide a smooth and consistent painting surface, or apply SHEETROCK® First Coat paint.

3.9 TOLERANCES

- .1 Maximum Variation of Finished Gypsum Board Surface from True Flatness: 3 mm in 3 m (1/8 inch in 10 ft) in any direction.

3.10 SCHEDULES

- .1 Level 1: Above finished ceilings concealed from view.
- .2 Level 3: Walls exposed to view.
- .3 Level 4: Ceilings exposed to view.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Formed metal framing of studs and furring, at interior locations.
- .2 Framing accessories.
- .3 Gypsum board and joint treatment.
- .4 Light gauge metal stud wall framing.
- .5 Metal channel ceiling framing unless otherwise stated on Structural Drawings.

1.2 RELATED SECTIONS

- .1 Section 05 50 00 - Metal Fabrications.
- .2 Section 06 10 13 - Wood Blocking and Curbing: Rough wood blocking within stud framing.
- .3 Section 07 26 00 - Vapour Retarders.
- .4 Section 07 21 13 – Board, Semi Rigid and Acoustic Insulation.
- .5 Section 07 62 00 - Metal Flashing and Trim: Head and sill flashings.
- .6 Section 09 21 16 - Gypsum Board Assemblies: Gypsum board on metal studs for partitioning.

1.3 REFERENCES

- .1 ASTM A123/A123M-09 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM A653/A653M-09 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .3 ASTM C645-09a - Non-Structural Steel Framing Members.
- .4 ASTM C754-04 - Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- .5 ASTM C1002-07 - Steel Self-Piercing, Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .6 CAN/CGSB-1.181-99 - Ready-Mixed, Organic Zinc-Rich Coating.
- .7 CAN/CGSB-7.1-98 - Lightweight Steel Wall Framing Components.
- .8 SSPC (The Society for Protective Coatings) - Steel Structures Painting Manual.

- .9 Association of Wall and Ceiling Contractors (A.W.C.C.) Specification Standards Manual.
- .10 CAN/CSA-S136-07 - North American Specification for the Design of Cold-Formed Steel Structural Members.
- .11 CSA W47.1-03 (R2008) - Certification of Companies for Fusion Welding of Steel Structures.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination:
 - .1 Coordinate with other work having a direct bearing on work of this section.
 - .2 Coordinate the placement of components within the stud framing assembly specified elsewhere.

1.5 QUALITY ASSURANCE

- .1 Perform Work to ASTM C754 Association of Wall and Ceiling Contractors (A.W.C.C.) Specification Standards Manual.
- .2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years experience.
- .3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

Part 2 Products

2.1 STUD FRAMING MATERIALS

- .1 Studs: ASTM A653/A653M, non-load bearing rolled steel, channel shaped, punched for utility access, as indicated on Drawings.
 - .1 Thickness (Interior): 0.53 mm (25 gauge) unless otherwise noted.
- .2 Tracks and Headers: Same material and thickness as studs, bent leg retainer notched to receive studs.
 - .1 Compression Track: Supply electrogalvanized 0.9mm (20ga.) nominal core thickness steel track with minimum 50mm (2 inch) deep leg and sufficient width to accommodate deflection movement in structure with compressing wall studs.
- .3 Ceiling Runners: Interior Steel Studs and Furring of the Association of Wall and Ceiling Contractors (A.W.C.C.) Specification Standards Manual With extended leg retainer.
 - .1 20ga. 0.88mm (0.035 inch), as detailed with leg length to allow for 50mm (2 inch) movement.
- .4 Furring and Bracing Members: Of same material as studs; thickness to suit purpose.
 - .1 0.5mm (25ga.) core thickness.
 - .2 22 x 65mm (7/8 inch x 2 ½ inch) hat section, galvanized.
- .5 Fasteners: ASTM C1002, self drilling, self tapping screws.

- .1 Non-load bearing channel stud framing: to ASTM 645-76. "Non-load Bearing Steel Studs, runners (Track), and Rigid Furring Channels for Screws".
- .2 Screws for the application to steel studs, runners and furring channels: to ASTM C646-78a "Steel Drill Screws for the Application of Gypsum Sheet Material to Light Gauge Steel Studs".
- .3 Screw penetration beyond joined materials shall not be less than 3 exposed threads.
- .4 Thread types and drilling capability shall conform to the manufacturer's recommendations.
- .5 Screws covered by sheathing materials shall have low profile heads.
- .6 Acoustical Insulating Tape: Interior Steel Studs and Furring of the Association of Wall and Ceiling Contractors (A.W.C.C.) Specification Standards Manual.
- .7 Bracing: cross bracing 25mm (1 inch) x 16ga. galvanized metal strapping for diagonal bracing.
- .8 Sill Gasket: Neoprene purpose made closed cell sill gasket to be installed under base track of exterior steel studs.
- .9 Acoustic Sealant: As specified in Section 09 21 16.
- .10 Touch-Up Primer for Galvanized Surfaces: CAN/CGSB-1.181.
- .11 Door frame double studs shall be 20ga., 0.88mm (.035 inch) – refer to Section 05 41 00 - Structural Metal Lightweight Framing.

2.2 FABRICATION

- .1 Fabricate assemblies of framed sections to sizes and profiles required.
- .2 Fit, reinforce, and brace framing members to suit design requirements.
- .3 Fit and assemble in largest practical sections for delivery to Site, ready for installation.

2.3 FINISHES

- .1 Accessories: Same finish as framing members.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 71 00: Verify existing conditions before starting work.
- .2 Verify that rough-in utilities are in proper location.

3.2 ERECTION

- .1 Align and secure top and bottom runners at 600 mm (24 inches) on centre.

- .2 Place two (2) beads of acoustic sealant between runners and substrate to achieve an acoustic seal.
- .3 Place one (1) beads of acoustic sealant between studs and adjacent vertical surfaces to achieve an acoustic seal.
- .4 Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- .5 Install studs vertically at 400 mm (16 inches) on centre, unless otherwise noted on Drawings.
- .6 Align stud web openings horizontally.
- .7 Secure studs to tracks using fastener method. Do not weld.
- .8 Stud Splicing: Not permissible.
- .9 Fabricate corners using a minimum of three studs.
- .10 Double stud at wall openings, door and window jambs, not more than 50 mm (2 inches) from each side of openings.
- .11 Brace stud framing assembly rigid.
- .12 Coordinate erection of studs with requirements of door frames and window frames; install supports and attachments.
- .13 Coordinate installation of wood bucks, anchors, and wood blocking with electrical and mechanical work to be placed within or behind stud framing.
- .14 Blocking: Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware, opening frames, and all other wall mounted installations.
 - .1 Secure wood blocking to studs.
- .15 Refer to Drawings for indication of partitions extending to finished ceiling only and for partitions extending through the ceiling to the structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
- .16 Coordinate placement of insulation in stud spaces after stud frame erection.

3.3 ACCESS PANELS

- .1 Co-ordinate the work and prepare openings for access panels in gypsum wallboard partitions and ceilings. Access panels will be supplied by other trades for access to plumbing, mechanical, and other service points. Installation of the access panel will be by Section 09 21 16 - Gypsum Board Assemblies, unless noted otherwise. This section prepares the opening with metal stud back up.

END OF SECTION

Part 1 General

Part 1.1 RELATED SECTIONS

- .1 Section 01 33 00 Submittal Procedures.
- .2 Section 01 45 00 Quality Control.
- .3 Section 01 61 00 Common Product Requirements.
- .4 Section 01 73 00 Execution Requirements.
- .5 Section 01 74 11 Cleaning.
- .6 Section 01 78 00 Closeout Submittals.
- .7 Section 07 92 00 Joint Sealing.
- .8 Section 09 21 16 Gypsum Board Assemblies.
- .9 Section 09 99 10. Room Finish Schedule.
- .10 Section 10 21 13 Plastic Toilet Compartments.
- .11 Section 10 28 10 Toilet and Bath Accessories.

Part 1.2 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 A108.1AC, 108.4.13, A118.1.10, ANSI A136.1).
 - .2 CTI A118.3[92], Specification for Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile Setting Epoxy Adhesive (included in ANSI A108.1).
 - .3 CTI A118.4[92], Specification for Latex Cement Mortar (included in ANSI A108.1).
 - .4 CTI A118.5[92], Specification for Chemical Resistant Furan Resin Mortars and Grouts for Tile Installation (included in ANSI A108.1).
 - .5 CTI A118.6[92], Specification for Ceramic Tile Grouts (included in ANSI A108.1).
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C144[04], Specification for Aggregate for Masonry Mortar.
 - .2 ASTM C207[06], Specification for Hydrated Lime for Masonry Purposes.
 - .3 ASTM C847[06], Specification for Metal Lath.
 - .4 ASTM C979[05], Specification for Pigments for Integrally Coloured Concrete.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB51.34[M86(R1988)], Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .2 CGSB 71GP22M[78(AMEND.)], Adhesive, Organic, for Installation of Ceramic Wall Tile.
 - .3 CAN/CGSB75.1[M88], Tile, Ceramic.
 - .4 CAN/CGSB25.20[95], Surface Sealer for Floors.

- .4 Canadian Standards Association (CSA International)
 - .1 CSA A123.3[05], Asphalt Saturated Organic Roofing Felt.
 - .2 CAN/CSAA3000[03(R2006)], Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
- .5 Terrazzo Tile and Marble Association of Canada (TTMAC)
 - .1 Tile Specification Guide 09 30 00 [2006/2007], Tile Installation Manual.
 - .2 Tile Maintenance Guide [2000].

Part 1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 Submittal Procedures.
- .2 Provide product data in accordance with Section 01 33 00 Submittal Procedures.
 - .1 Include manufacturer's information on:
 - .1 Ceramic tile, marked to show each type, size, and shape required.
 - .2 Chemical resistant mortar and grout (Epoxy and Furan).
 - .3 Cementitious backer unit.
 - .4 Dryset cement mortar and grout.
 - .5 Divider strip.
 - .6 Elastomeric membrane and bond coat.
 - .7 Reinforcing tape.
 - .8 Levelling compound.
 - .9 Latex cement mortar and grout.
 - .10 Commercial cement grout.
 - .11 Organic adhesive.
 - .12 Waterproofing isolation membrane.
 - .13 Fasteners.
 - .3 Provide samples in accordance with Section 01 33 00 Submittal Procedures.
 - .1 Wall tile: submit 300 x 450 mm sample panel of each colour, texture, size, and pattern of tile.
 - .2 Adhere tile samples to 13 mm thick plywood and grout joints to represent project installation.

Part 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.

Part 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.

Part 1.6 AMBIENT CONDITIONS

- .1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12 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 38 degrees C.
- .3 Do not apply epoxy mortar and grouts at temperatures below 15 degrees C or above 25 degrees C.

Part 1.7 MAINTENANCE

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

Part 2 Products

Part 2.1 WALL TILE

- .1 Ceramic tile: to CAN/CGSB75.1, Type 5, Class MR 4, 4" x 16" x 1/4" size, smooth surface, as indicated on drawings.
 - .1 **Standard of Acceptance: Ames Metro Series, 4" x 16" METP36 / PUTTY.**
 - .1 Pattern: Stacked Bond per interior elevations.

Part 2.2 MORTAR AND ADHESIVE MATERIALS

- .1 Cement: to CSAA5, type 10.
- .2 Sand: to ASTM C144, passing 16 mesh.
- .3 Hydrated lime: to ASTM C207, Type S.
- .4 Latex additive: formulated for use in cement mortar and thin set bond coat.
- .5 Water: potable and free of minerals and chemicals which are detrimental to mortar and grout mixes.
- .6 Adhesives: Maximum VOC limit 65 g/L [to SCAQMD Rule 1168].
 - .1 **Standard of Acceptance: Mapei Premixed Level Coats "Planitop 12"**

Part 2.3 GROUT

- .1 Colouring Pigments:
 - .1 Pure mineral pigments, limeproof and nonfading, complying with ASTM C979.
 - .2 Colouring pigments to be added to grout by manufacturer.
 - .3 Job coloured grout are not acceptable.
 - .4 Use in Commercial Cement Grout, DrySet Grout, and Latex Cement Grout.
 - .1 **Standard of Acceptance: Mapei Ultra**
 - .2 **Color:** To be Selected from Standard Colours.

Part 2.4 ACCESSORIES

- .1 Metal Trims:
 - .1 Standard of Acceptance:
 - .1 Wall-to-wall, inside corners: Schluter Dilex EHK, brushed stainless steel.
 - .2 Wall-to-wall, outside corners: Schluter Schiene, Satin anodized aluminum.
 - .3 Wall-to-floor transition: Schluter Schiene, Satin anodized aluminum.
 - .4 Expansion joints: Schluter Dilex BWS, BW bright white.
 - .2 Reinforcing mesh: 50 x 50 x 1.6 x 1.6 mm galvanized steel wire mesh, welded fabric design, in flat sheets.
 - .3 Cleavage plane: polyethylene film to CGSB 5134.
 - .4 Metal lath: to ASTM C847 galvanized finish, 10 mm rib at 2.17 kg/m².
 - .5 Prefabricated Movement Joints: purpose made, having a Shore A Hardness not less than 60 and elasticity of plus or minus 40 percent when used in accordance to TTMAC Detail 301EJ.
 - .6 Sealant: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 Sealants: maximum VOC limit 250 g/L to SCAQMD Rule 1168.
 - .7 Floor sealer and protective coating: to CAN/CGSB25.20, Type 1 or 2 to tile and grout manufacturers recommendations.
 - .8 Ceramic Accessories: soap holder; semi-recessed, 150 x 150 mm face dimension combination soap holder and grab bar, colour shall match surrounding wall tile.

Part 2.5 MIXES

- .1 Cement:
 - .1 Scratch coat: 1 part cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand, 1 part water, and latex additive where required. Adjust water volume depending on water content of sand.
 - .2 Slurry bond coat: cement and water mixed to creamy paste. Latex additive may be included.
 - .3 Mortar bed for walls and ceilings: 1 part cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand and 1 part water. Adjust water volume depending on water content of sand. Latex additive may be included.
 - .4 Levelling coat: 1 part cement, 4 parts sand, minimum 1/10 part latex additive, 1 part water including latex additive.
 - .5 Bond or setting coat: 1 part cement, 1/3 part hydrated lime, 1 part water.
 - .6 Measure mortar ingredients by volume.
- .2 Dry set mortar: mix to manufacturer's instructions.
- .3 Organic adhesive: premixed.
 - .1 Adhesives: maximum VOC limit 65 g/L to SCAQMD Rule 1168.
 - .1 **Standard of Acceptance: Mapei Ultra Mastic.**
- .4 Mix bond and levelling coats, and grout to manufacturer's instructions.

- .5 Adjust water volumes to suit water content of sand.

Part 2.6 CLEANING COMPOUNDS

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

Part 3 Execution

Part 3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including technical bulletins, handling, storage/installation instructions, and datasheets.

Part 3.2 WORKMANSHIP

- .1 Do tile work in accordance with TTMAC Tile Installation Manual 2006/2007, "Ceramic Tile", except where specified otherwise.
- .2 Apply tile or backing coats to clean and sound surfaces.
- .3 Fit tile around corners, fitments, fixtures, drains and other built in objects. Maintain uniform joint appearance. Cut edges smooth and even. Do not split tiles.
- .4 Maximum surface tolerance 1:800.
- .5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.
- .6 Lay out tiles so perimeter tiles are minimum 1/2 size.
- .7 Sound tiles after setting and replace hollow sounding units to obtain full bond.
- .8 Use metal trims at all inside and outside corners and at floor-to-wall transitions.
- .9 Use metal trims at termination of wall tile panels.
- .10 Allow minimum 24 hours after installation of tiles, before grouting.
- .11 Clean installed tile surfaces after installation and grouting cured.
- .12 Make expansion joints at 20'-0" max, both directions and where indicated on drawings.

Part 3.3 WALL TILE

- .1 Install in accordance with TTMAC details.

Part 3.4 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.

Part 3.5 CLEANING

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

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Resilient Tile flooring.
- .2 Resilient base.

1.2 RELATED SECTIONS

- .1 Section 04 22 00 - Concrete Unit Masonry
- .2 Section 08 44 13 - Glazed Aluminum Curtain Walls
- .3 Section 09 21 16 - Gypsum Board Assemblies.
- .4 Section 09 30 13 - Ceramic Tiling.

1.3 REFERENCES

- .1 ASTM E84-09c - Test Method for Surface Burning Characteristics of Building Materials.
- .2 ASTM F1861-08 - Resilient Wall Base.
- .3 ASTM G21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- .4 ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- .5 ASTM E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
- .6 ASTM F925 - Standard Test Method for Resistance to Chemicals of Resilient Flooring.
- .7 ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
- .8 ASTM D2240: Standard Test Method for Rubber Property (Durometer Hardness).
- .9 ASTM D3389: Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader).
- .10 ASTM F970: Standard Test Method for Static Load Limit.
- .11 ASTM D2047 - 04 Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
- .12 ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

- .13 ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- .14 ASTM E1745: Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
- .15 ASTM F710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- .16 CAN/ULC-S102.2-07 - Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.

1.4 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submittal Procedures.
- .2 Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colours available.
- .3 Shop Drawings: Provide drawing indicating layout plan of Skate Sport Flooring Interlocking Tiles indicating full and cut tiles at perimeter and internal conditions (wall, thresholds, partitions etc). Refer to drawing 14/A7.1 indicating design intent.
- .4 Samples:
 - .1 Submit two (2) samples, 600 x 600 mm (24x24 inch) in size illustrating colour and pattern for each floor material for each colour specified.
 - .2 Submit two (2) 600 mm (24 inch) long samples of base material for each colour specified.

1.5 SUBMITTALS FOR INFORMATION

- .1 Section 01 33 00: Submittal Procedures.
- .2 Installation Data: Manufacturer's special installation requirements including special procedures, perimeter conditions requiring special attention.

1.6 CLOSEOUT SUBMITTALS

- .1 Section 01 78 00: Closeout Submittals.
- .2 Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- .1 Section 01 78 40: Maintenance and extra material requirements.
- .2 Extra Stock Materials: Provide 10% of flooring, and base of each material specified.

1.8 QUALITY ASSURANCE

- .1 Products of This Section: Manufactured to ISO 14000 certification requirements.

- .2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
- .3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer as a Forbo “Master Mechanic”.

1.9 REGULATORY REQUIREMENTS

- .1 Resilient Flooring:
 - .1 Conform to applicable code for flame/smoke rating requirements of Class C to ASTM E84.
 - .2 Rubber Base:
 - .1 Conform to applicable code for flame/smoke rating requirements of Class A to ASTM E84.

1.10 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Protect roll materials from damage by storing on end.

1.11 ENVIRONMENTAL REQUIREMENTS

- .1 Store materials for three days prior to installation in area of installation to achieve temperature stability.

Part 2 Products

2.1 SKATE SPORT FLOORING INTERLOCKING TILES

- .1 Manufacturers:
 - .1 Mondo America Inc – RAMFLEX Interlocking Tile.
 - .2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.
 - .1 Johnsonite Triumph Interlocking Tile
 - .2 Substitutions: Refer to City of Winnipeg Bid Opportunity.
 - .1 Substitution Documentation
 - .2 Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
 - .3 Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for entrance door system performance criteria, and (2) has been engaged in the design, manufacturer and fabrication of aluminum entrance doors for a period of not less than ten (10) years. (Company Name)

- .4 Test Reports: Submit test reports verifying compliance with each test requirement for entrance door configurations required by the project.
 - .5 Product Sample and Finish: Provide samples of typical product sections and finish samples in manufacturer's standard sizes.
- .2 Materials – SKATE SPORT FLOORING INTERLOCKING TILES
- .1 Prefabricated rubber athletic flooring, calendered and vulcanized with a base of natural and synthetic rubbers, stabilizing agents and pigmentation.
 - .2 Skate and Spike resistant.
 - .3 Thickness: 0.315" (8mm).
 - .4 Color: G707 Grey, solid background color with random marbleization throughout material.
 - .5 Texture: hammered.
 - .6 Manufactured in two layers which are vulcanized together. The shore hardness of the top layer will be greater than that of the bottom layer; shore hardness of layers to be recommended by the Manufacturer and the limits specified.
 - .7 Size/Profile of tiles 622mm (24.5") x 622mm (24.5") or 610mm (24") x 610mm(24") interlocked. Waterjet cut grooves allow for loose lay installation (no adhesive). Tiles to be cut as required to accommodate perimeter and internal conditions (wall, thresholds, partitions etc). Refer to drawing 14/A7.1 indicating design intent.
 - .8 Cut tiles to be marked/catalogued on underside with system referencing the final layout plan to allow easy seasonal removal and re-installation.

2.2 MATERIALS - BASE

- .1 Manufacturers:
 - .1 Johnsonite; Product: Traditional Rubber Wall Base.
 - .2 Substitutions: Not permitted.
- .2 Base (RB): ASTM F1861, Type TP thermoplastic rubber; top set coved; premoulded external corners:
 - .1 Hardness: To ASTM D2240 Rubber – 85 Shore A.
 - .2 Height: 100 mm (4 inch).
 - .3 Thickness: 3 mm (1/8 inch) thick.
 - .4 Length: Installers choice.
 - .5 Colour: To be Selected from Standard Colours
- .3 Base Accessories: Premoulded end stops and external corners, of same material, size, and colour as base.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 71 00: Verify existing conditions before starting work.
- .2 Verify concrete floors are dry to a maximum moisture content of 7%, and exhibit negative alkalinity, carbonization, or dusting.

3.2 PREPARATION

- .1 Prepare Site and substrate to manufacturer's written instructions.
- .2 Vacuum clean substrate.
- .3 Area shall be clean, fully enclosed, weathertight and maintained at a uniform temperature of at least 68°F for 7 days before, during and after installation.
- .4 Products to be installed, including adhesives shall be maintained at a uniform temperature of at least 68°F for 48hrs before installation.
- .5 Coiled wall base shall lay flat temperature specified above for at least 24hrs prior to installation.

3.3 INSTALLATION - SKATE SPORT FLOORING

- .1 Install rubber athletic interlocking flooring tiles in accordance with Manufacturer's current printed Installation Manual.
- .2 Install per final layout drawing. Refer to drawing 14/A7.1 indicating design intent.

3.4 INSTALLATION - BASE

- .1 Install rubber base to manufacturer's written instructions.
- .2 Fit joints tight and vertical. Maintain minimum measurement of 450 mm (18 inches) between joints.
- .3 Mitre internal corners. At external corners, use premoulded units. At exposed ends, use premoulded units.
- .4 Install base on solid backing. Bond tight to wall and floor surfaces.
- .5 Scribe and fit to door frames and other interruptions.

3.5 CLEANING

- .1 Section 01 74 11: Cleaning installed work.
- .2 Remove access adhesive from floor, base, and wall surfaces without damage and in accordance with manufacturer's written instructions.

- .3 Initial cleaning should only be performed 72 hours after the rubber athletic surface has been completely installed.
- .4 Maintain rubber athletic flooring according to Manufacturer's current maintenance instructions for specified product.

3.6 PROTECTION OF FINISHED WORK

- .1 Section 01 78 40: Protecting installed work.
- .2 Prohibit traffic on floor finish for forty-eight (48) hours after installation.
- .3 Rubber athletic flooring surface can be protected with 1/8" Masonite during and after the installation, prior to acceptance by the Contract Administrator.

3.7 SCHEDULES

- .1 Refer to Room Finish Schedule and drawings.

END OF SECTION

Part 1 General

Part 1.1 RELATED SECTIONS

- .1 Section 01 33 00 Submittal Procedures.
- .2 Section 01 45 00 Quality Control.
- .3 Section 01 61 00 Common Product Requirements.
- .4 Section 01 73 00 Execution Requirements.
- .5 Section 01 74 11 Cleaning.
- .6 Section 01 78 00 Closeout Submittals.
- .7 Section 06 40 00 Architectural Woodwork.
- .8 Section 07 92 00 Joint Sealants.
- .9 Section 08 11 00 Metal Doors and Frames.
- .10** Section 09 21 16 Gypsum Board Assemblies.
- .11 Section 09 99 10 Room Finish Schedule.

Part 1.2 REFERENCES

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .2 Master Painters Institute (MPI)
 - .1 MPI Architectural Painting Specifications Manual, [2004].
 - .2 MPI - Maintenance Repainting Manual, [1998].

Part 1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit product data and instructions for each paint and coating product to be used.
 - .2 Submit product data for the use and application of paint thinner.
 - .3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 Submittal Procedures. Indicate VOCs during application and curing.
 - .4 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .5 Submit manufacturer's installation and application instructions.

Part 1.4 STORAGE AND HANDLING

- .1 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 within temperature as recommended by manufacturer.
- .2 Fire Safety Requirements:
 - .1 Provide one 9 kg Type ABC fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from Site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.

Part 1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from Site and dispose of packaging materials at appropriate recycling facilities.
- .2 Place materials defined as hazardous or toxic waste, including tubes and containers, in containers or areas designated for hazardous waste.
- .3 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.

Part 1.6 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Ensure adequate ventilation in enclosed spaces.
 - .2 Co-ordinate use of existing ventilation system with building City of Winnipeg and ensure its operation during and after application of paint as required.
 - .3 Provide minimum lighting level of 500 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Apply paint finishes when ambient air and substrate temperatures at location of installation can be satisfactorily maintained during application and drying process, within MPI and paint manufacturer's prescribed limits.
 - .2 Test concrete, masonry and plaster surfaces for alkalinity as required.
 - .3 Apply paint to adequately prepared surfaces, when moisture content is below paint manufacturer's prescribed limits.
- .3 Additional application requirements:
 - .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 in occupied facilities during silent hours only. Schedule operations to approval of the building Lessee such that painted surfaces will have dried and cured sufficiently before occupants are affected.

Part 2 Products

Part 2.1 MATERIALS

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

Part 2.2 COLOURS: Refer to Section 09 99 10 Room Finish Schedule.

.1 Standard or Acceptance: Benjamin Moore:

- .1 PT-1 TBD**
- .2 PT-2 TBD**
- .3 PT-3 TBD**
- .4 PT-4 TBD**
- .5 PT-5 TBD**

Part 2.3 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to Site, in accordance with manufacturer's written instructions. Obtain written approval from Contract Administrator for tinting of painting materials.
- .2 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin waterbased paints.
- .3 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .4 Remix paint in containers prior to and during application to ensure breakup of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

Part 2.4 GLOSS/SHEEN RATINGS

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

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 - Matte Finish (flat)	Max. 5	Max. 10
Gloss Level 2 - VelvetLike Finish	Max.10	10 to 35
Gloss Level 3 - Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 - SatinLike Finish	20 to 35	min. 35
Gloss Level 5 - Traditional SemiGloss Finish	35 to 70	

Gloss @ 60 degrees

Sheen @ 85 degrees

Gloss Level 6 - Traditional Gloss 70 to 85

Gloss Level 7 - High Gloss Finish More than 85

- .2 Gloss level ratings of painted surfaces [as indicated] [and] [as noted on Finish Schedule].

Part 2.5 EXTERIOR PAINTING

- .1 Concrete Vertical Surfaces: (including horizontal soffits)
 - .1 EXT 3.1A Latex Gloss Level 3 finish.
- .2 Concrete Masonry Units: smooth and split face block and brick
 - .1 EXT 4.2A Latex Gloss Level 3 finish.
- .3 Structural Steel and Metal Fabrications: columns, beams, joists and miscellaneous metal.
 - .1 EXT 5.1D Alkyd Gloss Level 3 finish.
- .4 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).
 - .1 EXT 5.3B Alkyd Gloss Level 5 finish.
- .5 Dimension Lumber: columns, beams, exposed joists, underside of decking, siding, fencing, etc.
 - .1 EXT 6.2B Waterborne solid colour stain finish.
 - .2 EXT 6.2C Alkyd Gloss Level 3 finish.
 - .3 EXT 6.2L Semitransparent stain finish.
- .6 Dressed Lumber: doors, door and window frames, casings, battens, smooth facias, etc.
 - .1 EXT 6.3B Alkyd Gloss Level 5 finish.
 - .2 EXT 6.3C Solid colour stain finish (not to be used in high contact areas or on doors).
 - .3 EXT 6.3D Semitransparent stain finish (not to be used on doors).

Part 2.6 EXTERIOR REPAINTING

- .1 Structural Steel and Metal Fabrications: columns, beams, joists and miscellaneous metal.
 - .1 REX 5.1D Alkyd Gloss Level 5.
 - .2 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).
 - .1 REX 5.3B Alkyd Gloss Level 5.
 - .3 Dressed Lumber: doors, door and window frames, casings, battens, smooth fascias, etc.
 - .1 REX 6.3B Alkyd Gloss Level 5.
 - .2 REX 6.3D SemiTransparent Stain.

Part 2.7 INTERIOR PAINTING

- .1 Concrete horizontal surfaces: floors.
 - .1 INT 3.2B - Alkyd floor enamel low gloss finish.
- .2 Structural Steel and Metal Fabrications: columns, beams, joists and miscellaneous metal.
 - .1 INT 5.1E Alkyd - Gloss Level 5 finish.

- .3 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).
 - .1 INT 5.3C - Alkyd Gloss Level 5 finish (over cementitious primer).
- .4 Dressed Lumber: doors, door and window frames, casings, mouldings, etc.:
 - .1 INT 6.3A - Latex Gloss Level 5 finish.
 - .2 INT 6.3B - Alkyd Gloss Level 5 finish.
 - .3 INT 6.3E - Polyurethane varnish Gloss Level 5 finish (over stain).
 - .4 INT 6.3K - Polyurethane varnish Gloss Level 5 finish.
- .5 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock" type material, etc.
 - .1 INT 9.2A - Latex Gloss Level 4 finish (over latex sealer).
 - .2 INT 9.2C - Alkyd Gloss Level 4 finish (over latex sealer).
 - .3 INT 9.2M - Institutional low odour/low VOC Gloss Level 4 finish.

Part 2.8 INTERIOR REPAINTING

- .1 Structural Steel and Metal Fabrications: columns, beams, joists and miscellaneous metal.
 - .1 RIN 5.1E Alkyd Gloss Level 5.
- .2 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).
 - .1 RIN 5.3C Alkyd Gloss Level 5.
- .3 Plaster and Gypsum Board: gypsum wallboard, drywall, "sheet rock" type material, etc.
 - .1 RIN 9.2A Latex Gloss Level 4.
 - .2 RIN 9.2C Alkyd Gloss Level 4 finish.

Part 3 Execution

Part 3.1 GENERAL

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.
- .2 Perform preparation and operations for interior painting in accordance with MPI - Architectural Painting Specifications Manual and MPI - Maintenance Repainting Manual except where specified otherwise.

Part 3.2 EXAMINATION

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Contract Administrator damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

Part 3.3 PREPARATION

- .1 Protection:
 - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable nonstaining covers or masking. If damaged, clean and restore surfaces as directed by Contract Administrator.
 - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
 - .3 Protect factory finished products and equipment.
- .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 building City of Winnipeg.
- .3 Clean and prepare surfaces in accordance with MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual specific requirements and coating manufacturer's recommendations.
- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .5 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
 - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
 - .2 Apply wood filler to nail holes and cracks.
 - .3 Tint filler to match stains for stained woodwork.
- .6 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
- .7 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements.
- .8 Touch up of shop primers with primer as specified.
- .9 Do not apply paint until prepared surfaces have been accepted by Contract Administrator.

Part 3.4 APPLICATION

- .1 Method of application to be as approved by Contract Administrator. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .3 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

- .4 Sand and dust between coats to remove visible defects.
- .5 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.
- .6 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .7 Finish closets and alcoves as specified for adjoining rooms.
- .8 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

Part 3.5 MECHANICAL/ELECTRICAL EQUIPMENT

- .1 Paint conduits, piping, hangers, ductwork and other mechanical and electrical equipment exposed in finished areas, to match adjacent surfaces, except as indicated.
- .2 Do not paint over nameplates.
- .3 Keep sprinkler heads free of paint.
- .4 Paint fire protection piping red.
- .5 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .6 Paint natural gas piping yellow.
- .7 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touchup as required, and paint conduits, mounting accessories and other unfinished items.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Water Sealant – Graffiti Remover applied to exterior of masonry and architectural precast concrete surfaces.

1.2 RELATED SECTIONS

- .1 Section 04 22 00 – Concrete Unit Masonry.
- .2 Section 07 92 00 - Joint Sealants.
- .3 Section 09 99 10 – Painting for Minor Works.

1.3 SYSTEM DESCRIPTION

- .1 Professional Water Sealant & Anti-Graffiti is a "Dual Purpose" silicone rubber sealant which provides invisible protection from graffiti as well as water damage.

1.4 SUBMITTALS FOR INFORMATION

- .1 Section 01 33 00: Submittal Procedures.
- .2 Product Data: Submit Manufacturer's Product Data Sheet for product to be used.
- .3 Installation Data: Manufacturer's special installation requirements indicating special procedures and conditions requiring special attention; cautionary procedures required during application.
- .4 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- .5 Warranty Application: Submit Manufacturer's Pre-approval confirmation of warranty sections 1 and 2.
- .6 Notice of Warranty: Submit project warranty information.

1.5 CLOSEOUT SUBMITTALS

- .1 Section 01 78 00: Closeout Submittals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- .1 Section 01 78 40: Maintenance and extra material requirements.
- .2 Extra Stock Materials: Provide nine (9) litres (two (2) gallons) of coating.

1.7 QUALITY ASSURANCE

- .1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

Manufacturer capable of providing field representation for the purpose of conducting mock-ups and approving applicator installation methods.

- .2 Installer Qualifications: Submit qualifications of applicator; stating applicator has a minimum of three (3) years experience using the specified or a similar product. Provide a list of several most recently completed projects, including project name and location, names of owners and consultants, and description of products used, substrates, and method of application.
 - .1 Employs persons trained for the application of the specified or similar products.
 - .2 Comply with applicable environmental regulations.
- .3 Pre-Application Meeting: Convene a pre-application meeting one (1) week before the start of application of graffiti resistant coatings. Require attendance of parties directly affecting work of this section, including the Contractor, Contract Administrator, applicator, and manufacturer's representative. Review environmental regulations, test panel procedures, protection of surrounding areas and non-masonry surfaces, surface preparation, application, field quality control, final cleaning, and coordination with other work.

1.8 MOCK-UP

- .1 Section 01 43 00: Requirements for mock-up.
- .2 Apply product to panels in accordance with manufacturer's written instructions to determine appropriate strength, coverage rates, compatibility, effectiveness, surface preparation, application procedures, and desired results.
- .3 Allow ten (10) days or until test panels are thoroughly cured before evaluating final appearance and results.
- .4 Testing:
 - .1 Graffiti Removal Test: Apply graffiti paint to test panels and allow at least 24 hours longer for paint to cure. Apply cleaner, as supplied by manufacturer of Graffiti product, to test for ease of removal of graffiti.
- .5 Do not begin full-scale application until test panels are inspected and approved by the Contract Administrator.
- .6 Refinish mock-up area as required to produce acceptable work.
- .7 Provide (2 ft x 2 ft mock-up.
- .8 Locate where directed by Contract Administrator.
- .9 Approved mock-up may remain as part of the Work.
- .10 Document Mock-up on product warranty application. Applicable section of the warranty application must be submitted to the manufacturer and approved prior to commencement of full-scale application.

1.9 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Protect coating liquid from freezing.
- .3 Refer to manufactures instructions.
- .4 Store containers upright in a cool, dry place. Keep away from sparks and open flame. Store and handle materials in accordance with manufacturer's written instructions. Use product within 8 hours of opening container.
- .5 Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.10 ENVIRONMENTAL REQUIREMENTS

- .1 Maintain environmental conditions (temperature and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- .2 Do not apply coating when ambient or surface temperature is lower than 5 degrees C (40 degrees F) or higher than 35 degrees C (95 degrees F).
- .3 Do not apply material if the substrate is wet or contains frozen moisture. Allow substrate to dry for a minimum of 48 hours after rain or 72 hours after power washing.
- .4 Do not apply material during inclement weather or if precipitation is expected within 12 hours.
- .5 Do not use spray method of application under windy conditions.

1.11 WARRANTY

- .1 Manufacture's Warranty:
 - .1 Submit Sections 1 & 2 of manufacturer's warranty application prior to onset of full-scale water repellent application. Do not proceed until approved by manufacturer.
 - .2 Submit Section 3 of manufacturer's warranty application after water repellent has been applied.
 - .3 Warranty available: Combination 10-year Vertical Water Repellent and 5-year Graffiti Protection.

Part 2 Products

2.1 MANUFACTURERS

- .1 Professional Products of Kansas; Product: Water Sealant – Graffiti Remover; supplied by Alsip's Building Products & Services.
- .2 Professional Products of Kansas; Product: Phase II Cleaner.

- .3 Substitutions: Refer to Bid Opportunity.

2.2 MATERIALS

- .1 Coating: Silicone rubber; colourless; retaining 400% elongation allowing for bridging of hairline cracks and compensating for thermal expansion and contraction.
 - .1 Professional Water Sealant & Anti-Graffiti, PWS-15 Super Strength: First coat in the two-coat process for graffiti protection.
 - .1 Form: Liquid.
 - .2 Color: Clear.
 - .3 Active Substance: RTV Silicone Rubber.
 - .4 Percent Active Material: 15 percent.
 - .5 VOC Content: Meets local and federal requirements.
 - .2 Professional Water Sealant & Anti-Graffiti, PWS-8 Extra Strength: Second coat in the two-coat process for graffiti protection.
 - .1 Form: Liquid.
 - .2 Color: Clear.
 - .3 Active Substance: RTV Silicone Rubber.
 - .4 Percent Active Material: 8 percent.
 - .5 VOC Content: Meets local and federal requirements.
 - .3 Graffiti resistant coatings shall provide water repellent protection capable of passing RILEM test method II.4.
 - .4 Graffiti resistant coatings shall be non sacrificial, allowing for repeated cycles of graffiti tagging and removal with no need to reapply the coating.
 - .5 Graffiti resistant coatings shall be unaffected by UV rays, salts, acid rain or water.
- .2 Graffiti Removal: Bio-degradable surfactants in a bio-degradable solvent.
 - .1 Professional Products of Kansas; Phase II Cleaner.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 71 00: Verify existing conditions before starting work.
- .2 Verify joint sealants are installed and cured.
- .3 Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of coating.

3.2 PREPARATION

- .1 Prepare in accordance with manufactures instructions.
- .2 Delay work until masonry mortar and architectural precast concrete substrate is cured a minimum of thirty (30) days.

- .3 Remove loose particles and foreign matter.
- .4 Remove oil, dirt, grease, paint, efflorescence, form release agents, any other water repellent or coating or foreign substance with a chemical solvent which will not affect coating.
- .5 Scrub and rinse surfaces with water and let dry.
- .6 Surfaces that have been power washed must be allowed to dry for a minimum of 72 hours and after a rain a minimum of 48 hours. Application to wet or damp surfaces will inhibit penetration and may cause ghosting or whiting. Do not apply if precipitation is expected within 12 hours.

3.3 APPLICATION

- .1 Apply coating to substrate in accordance with manufacturer's written instructions, environmental regulations, and application procedures/coverage rates determined by results of Mock-up.
- .2 Do not apply to horizontal surfaces.
- .3 Apply by a high-volume, low pressure, pump-up sprayer (between 40 and 60 psi), with a fan tip and solvent resistant fittings; roller, or brush of natural bristle may be used in areas where spray application is not appropriate; do not use Airless spray equipment; as recommended by manufacturer.
- .4 Apply in two (2) continuous, uniform coats as recommended by manufacturer.

3.4 PROTECTION OF FINISHED AND ADJACENT WORK

- .1 Section 01 78 40: Protecting installed work.
- .2 Protect adjacent surfaces not scheduled to receive coating.
- .3 Protect landscaping, property, vehicles and building and materials.
- .4 If applied to unscheduled surfaces, remove immediately by a method instructed by coating manufacturer.
- .5 Mask all glass and non-porous materials such as aluminum framing, etc. (product over-spray is extremely durable and not easily removed from glass).
- .6 Turn off and cover ventilation systems, heating and air-conditioning ducts and fresh air intakes to protect building occupants from inhalation of fumes.

3.5 GRAFFITI REMOVAL

- .1 Remove graffiti as soon as possible after surface has been defaced. Apply Professional Phase II Cleaner directly to the painted surface and allow it to work for 5-10 minutes. Agitate with a nylon brush and rinse thoroughly with water. A power washer (not to exceed 1200 psi) may also be used to remove graffiti.

3.6 CLEANING

- .1 As recommended by manufacturer.
- .2 Upon completion, remove all equipment, material and debris, leaving the area in an undamaged and acceptable condition. Dispose of material containers according to state and local environmental regulations.
- .3 Repair, restore, or replace to the satisfaction of the Contract Administrator, all materials, landscaping, and non-masonry surfaces damaged by exposure to material application.

3.7 SCHEDULES

- .1 All Exterior and Interior exposed masonry surfaces: Two coat application, clear.

END OF SECTION

No.	Room Name	Floor		Base		Ceiling		Walls			Key Notes	
		Material	Finish	Material	Finish	Material	Finish	Material	Finish	Material		Finish
MAIN LEVEL												
101	Sitting / Skate Change	CONC-S / SSF		-		WCP	P	ALUM-GL	-	ALUM-GL	-	
102	Corridor	CONC-S / SSF		-		WCP	P	BBM	-	RW	-	
103	Janitor Closet	CONC-S		RB		ES	PT	GWB-AR	PT	GWB-AR	PT	
104	Male W/C	CONC-S / SSF		-		WCP/GWB-AR	P	BBM	-	RW	-	
105	Corridor	CONC-S / SSF		-		WCP	P	RW	P	-	-	
106	Universal W/C	CONC-S / SSF		-		GWB-AR	PT	CT	-	CT	-	
107	Female W/C	CONC-S / SSF		-		WCP/GWB-AR	P	BBM	-	RW	P	
108	Mechanical	CONC-S		-		WCP	P	CB	-	CB	-	
109	Picnic Shelter	CP		-		WCP	P	-	-	-	-	
110	Picnic Shelter	CP		-		WCP	P	-	-	-	-	

LEGEND

Floor and Floor base Finishes
 CONC-S Concrete - Sealed
 CP Precast Concrete Unit Paving
 SSF Skate Sport Flooring Interlocking Tiles
 RB Rubber Base

Ceiling Finishes
 GWB-AR Gypsum Wall Board - Abuse Resistant
 WCP Wood Ceiling Panel
 ES Exposed Structure

Wall Finishes
 GWB-AR Gypsum Wall Board - Abuse Resistant
 ALUM-GL Aluminum Frame and Glazing
 PT Paint
 BBM Burnished Block Masonry
 CT Ceramic Tile
 RW Reclaimed Wood Wall Cladding
 P Clear Polyurethane
 CB Concrete Block

North
 Material
 Finish

East
 Material
 Finish

West
 Material
 Finish

South
 Material
 Finish