PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1. Conform to Sections of Division 1 as applicable.

1.2 RELATED WORK

1. Section 07 90 00, Sealants.

2. Gypsum, cement board to receive tile finish: Section 09 29 00, Gypsum Board Systems.

3. Washroom Accessories: Section 10 28 00

4. Section 20 Mechanical

5. Section 22 Plumbing

6. Section 23 Heating Ventilation and Air Conditioning

7. Section 26 Electrical

1.3 REFERENCES

ANSI A108.4, ANSI A118.1, ANSI A118.3, ANSI A118.4, all part of ANSI 108.1-1985	- Installation of Ceramic Tile
ASTM C207-91 (1992)	- Specification for Hydrated Lime for Masonry Purposes
ASTM C847-88 (1992)	- Specification for Metal Lath
CAN/CGSB-19.22-M89	- Mildew-Resistant Sealing Compound for Tubs and Tiles
CAN/CGSB-51.33-M89	- Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction
CGSB 71-GP-22M-78	- Adhesive, Organic, for Installation of Ceramic Wall Tile
CGSB 71-GP-30M-79	- Adhesive, Epoxy and Modified Mortar Systems, for Installation of Quarry Tiles
CAN/CGSB-75.1-M88	- Tile, Ceramic
CAN/CSA-A5-93	- Portland Cement
CSA A82.30-M80 (R1992)	- Interior Furring, Lathing and Gypsum Plastering
CSA A82.56-M76	- Aggregate for Masonry Mortar
CSA A123.3-M79	- Asphalt or Tar Saturated Roofing Felt
CSA G30.5-M83 (1991)	- Welded Steel Wire Fabric for Concrete Reinforcement
TTMAC	- Terrazzo Tile & Marble Association of Canada

1.4 SUBMITTALS

1. Samples

1. Submit 4 samples of each colour, texture, size and pattern of tile. Adhere samples to cementitious board (or cement flat panel) 300 mm x 300 mm (12" x 12") with setting compound and grout as specified.

2. If requested, submit samples as above showing corner construction with vertical (wall) and horizontal (floor) installations of ceramic tile.

3. Samples of the Penny Round Glass Mosaic Tile (GMT-1) colour options are to be submitted prior to the pre-construction meeting described in specification section 03 35 43 Polished Concrete Finishing.

4. Unless otherwise specified herein or indicated on Drawings, tile will be selected by the Consultant after award of Contract. The Consultant may select colours, shades and textures of tile within limits of selected manufacturer's standard type and colour list. If the Consultant so directs, tiling shall be carried out in 2 or more colours and 2 or more sizes within a given area.

5. **Maintenance Manual:** Submit 3 copies of maintenance manual issued by TTMAC in accordance with Section 01 33 00, Submittals.

1.5 PROJECT CONDITIONS

1. **Environmental Requirements:** Maintain air and structural base temperatures at ceramic tile installation area above 12 deg C (54 deg F) for 48 hrs before, during, and 45 hrs after installation.

1.6 MAINTENANCE

1. **Extra Materials:** Supply 2% extra ceramic tile for maintenance use of each colour, type and finish of same production run as installed material. Store where directed on Site in labelled boxes giving manufacturer's name, material description, colour, pattern and location of installation.

Part 2 PRODUCTS

2.1 MATERIALS

1. **Porcelain Ceramic Tile (POR-1)**

1. For floors and wall bases as shown in the room finish schedule in areas such as public corridors and halls, washrooms, washroom vestibules, elevator cab, elevator vestibules.
2. Porcelain tile: CAN/CGSB-75.1-M, Type 1, square edges, slip resistant surface.
3. Glam Series, “Tortora Matte” (Coloured Body Porcelain) by Olimpia Tile 600mm x 600mm size, and 600mm x 600mm cut down to 300mm x 600mm size.

2. **Porcelain Ceramic Tile (POR-2)**

1. For walls and wall base as shown in the room finish schedule in areas such as Prep Kitchen and Storage Room, Kitchen, and Storage, washrooms.
2. Porcelain tile: CAN/CGSB-75.1-M, Type 1, square edges, slip resistant surface.

3. Unicolour, "White Matte" (Unglazed Porcelain) by Olimpia Tile 300mm x 600mm and 600mm x 600mm sizes.

3. **Glass Mosaic Tile (GMT-1)**

1. For inset feature floor, walls and wall base as shown in the room finish schedule in Flex Event Space / Bar Feature 003.
2. Pixie ¾" Penny Round Glass Mosaic Tile, by Andova . Colour to be selected from four colour options: Nia, Moka, Olav, Char, coordinating with submitted samples or mock-ups of the adjacent polished concrete floor. Samples of the Penny Round Glass Mosaic Tile colour options are to be submitted prior to the pre-construction meeting described in specification section 03 35 43 Polished Concrete Finishing.

4. Sealer: Non-wax penetrating sealer, recommended by tile manufacturer.

5. Mortars and Adhesives: Use of following mortars or adhesives is Contractor's choice, subject to restrictions stated and Site conditions, except where epoxy or acid resistant mortar and grout is required.

1. Thin Set Mortar: ANSI 118.4 (CGSB 71-GP-30M for Type 2):

- Multicure (Modified System) by C-Cure or Kerabond/Keralastic by Mapei or No. 52 Versatile by Flextile.

2. Latex Modified Thin Set Mortar: For conditions above use Multi-cure by C-Cure or other latex mortar conforming to ANSI A108.4, except where epoxy adhesive is required.

3. Mortar Bed: Mixed on Site of following components:

- Cement: CAN/CSA-A5-M, Type 10 Portland.
- Sand: CSA A82.56-M.
- Hydrated Lime: To ASTM C207, Type S.
- Latex or Acrylic Additive: Formulated for use in Portland cement mortar, Cemtex by Master Builders or Gembond by Gemite, or Acryli Bond by Thoro, or C-Crylic 200 by C-Cure, or Acrylic Mortar Additive by Flextile or Planacrete 50 by Mapei or Laticrete 3701 by Laticrete or Acryli-crete 5000 by Crest or Permalast by Lepage.
- Water: Potable, free of minerals detrimental to mortar and grout mixes.

6. Adhesives:

- Epoxy Adhesive: ANSI A118.3, CGSB 71-GP-30M Type 1 (100% solids epoxy), Chemset by Master Builders or Epoxy 100 by C-Cure, Latapoxy SP-100 by Laticrete, Kerapoxy by Mapei or Flex-Epoxy 100 by Flextile.

7. Grouts: Use of following grouts is Contractor's choice subject to restrictions stated. Colour as selected by the Consultant from standard range.

1. Portland Cement Sanded Grout: Floor Grout by Flextile or Ultra/Color by Mapei; or mixed on Site cement grout, consisting of 1 part Portland cement and 2 parts sand. Colour as selected by the Consultant.

2. Dry Cure Unsanded Grout: Thin-set, narrow joint, up to 3 mm (1/8") wide, by Flex-Epoxy 200 Modified Emulsion by Flextile, or C-Cure Polymer Modified unsanded grout by C-Cure, or Keracolor unsanded grout mixed with Plastijoints by Mapei.

3. Epoxy Grout: Chemset by Master Builder, or Epoxy 100 by C-Cure, or Flex-Epoxy 100 by Flextile, or Kerapoxy by Mapei, or Latapoxy SP-100 by Laticrete. Use mandatory with epoxy adhesive.

2.2 ACCESSORIES

1. Reinforcing Mesh: 50 mm x 50 mm x 1.6 mm x 1.6 mm galvanized steel wire mesh complying with CSA G30.5-M.

2. Thresholds: Granite, 1/4"(13 mm) thick, bevelled 1 side, honed finish to exposed surfaces, size to suit door opening and frame width, (colour to match adjacent finish).

3. Tactile Walking Surface Indicator (TWSI) Truncated Domes: 22mm x 22.5mm Advantage One by Kinesik Engineered Products (905-330-9233). Truncated domes conforming to latest OBC requirements. 316L marine grade stainless steel with concentric ring pattern. Spacing to be determined upon shop drawing review by architect prior to ordering.

4. Tactile Walking Surface Indicator (TWSI) Plate with Truncated Domes: 300mm x 300mm Advantage One Plate by Kinesik Engineered Products (905-330-9233). Truncated domes conforming to latest OBC requirements. 316L marine grade stainless steel with concentric ring pattern. Spacing and position to be determined upon shop drawing review by architect prior to ordering.

2.3 MIXES

1. Mortar Bed

1. Scratch Coat: 1 part cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand, 1 part water. Adjust water volume depending on water content of sand. Use as little water as possible to obtain a stiff mix.
2. Slurry Bond Coat: Cement and water mixed to creamy paste. Latex additive may be included.

3. Mortar Bed for Floors: 1 part Portland cement, 4 parts sand, 1 part water. Adjust water volume depending on water content of sand. Latex additive may be included.

4. 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.

5. Levelling Coat: 1 part cement, 4 parts sand, 1 part water, including minimum 1/10 part latex additive (as per manufacturer's instructions) such as Level-Cure by C-Cure.

6. Bond or Setting Coat: 1 part cement, 1/3 part hydrated lime, 1 part water.

7. Measure mortar ingredients by volume.

2. Thin Set Mortar: Mix to manufacturer's instructions.

3. Organic Adhesive: Pre-mixed.

Part 3 EXECUTION

3.1 INSTALLATION

1. General

1. Install products in accordance with manufacturer's specifications and as indicated herein.

2. Install tile in accordance with TTMAC Installation Manual and otherwise in accordance with ANSI A108.5, and ANSI 108.10.

3. Wipe back side of tile with slightly damp towel or sponge to remove dust, dirt and/or residue. Provide 100% mortar coverage at perimeter edges and corners.

4. Apply tile and backing materials to clean and sound surfaces and in accordance with setting system specified.

5. Remove paper facing after setting and adjust tiles where applicable.

6. Fit tile around corners, fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Make cut edges smooth and even.

7. Maximum Surface Tolerance: 1:800.
8. Make joints between tiles uniform and approximately 1.5 mm (1/16") wide, plumb, straight, true, even and flush with adjacent tile. **Ensure sheet layout not visible after installation and that joint width remains consistent**. Defective or poor installation work will be identified as deficient and will have to be removed and new tile work installed. Align patterns.

9. Lay out tiles so perimeter tiles are minimum 1/2 size.

10. Sound tiles after setting and replace hollow sounding units to obtain full bond.

11. Make internal angles square and external angles (rounded).

12. Make coved base of the same material as floor tile.

13. Use round trim at termination of wall tile panels, except where panel abuts projecting or right angle surface or flush adjacent surface.

14. Install thresholds at doors. Install (divider strips) (thresholds) at junction of tile flooring and dissimilar material.

15. Allow minimum 24 hours after installation of tiles before grouting. Prepare and apply grout to manufacturer's instructions. Grout colour by the Consultant's selection after tender.

16. Clean installed tile surfaces after grouting cured.

17. Make control joints at max 6 m (20') in each direction or follow grid lines of building where indicated. Make joint width same as tile joints. Fill control joints with sealant in accordance with manufacturer's recommendations. Keep building expansion joints free of mortar or grout.

3.2 PROTECTION

1. Prohibit all traffic in work areas during installation and for 72 hour after installation of tile.

End of Section 09 30 00