

Part 1 General

1.1 SECTION INCLUDES

- .1 Setting materials.
- .2 Grout materials.
- .3 Waterproof membrane.
- .4 Floor finish materials.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 77 00 – Project Closeout.
- .3 Section 02 41 99 – Selective Demolition
- .4 Section 07 92 00 - Joint Sealing.

1.3 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34-[M86(R1988)], Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .2 CGSB 71-GP-22M-[78], Adhesive, Organic, for Installation of Ceramic Wall Tile.
 - .3 CAN/CGSB-75.1-[M88], Tile, Ceramic.
 - .4 CAN/CGSB-25.20-[95], Surface Sealer for Floors.
- .2 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-A3000-[98], Cementitious Materials Compendium (Consists of A5-98, A8-98, A23.5-98, A362-98, A363-98, A456.1-98, A456.2-98, A456.3-98).
- .3 Terrazzo Tile and Marble Association of Canada (TTMAC)
 - .1 Tile Specification Guide 096600 2016-2018, Tile Installation Manual.
 - .2 Hard Surface Maintenance Guide 2008.

1.4 PRODUCT DATA

- .1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Include manufacturer's information on:
 - .1 Porcelain tile, marked to show each type, size, and shape required.

- .2 Dry-set Portland cement mortar and grout.
- .3 Divider strip.
- .4 Elastomeric membrane and bond coat.
- .5 Reinforcing tape.
- .6 Leveling compound.
- .7 Latex-Portland cement mortar and grout.
- .8 Organic adhesive.
- .9 Slip resistant tile.
- .10 Fasteners.
- .11 Waterproofing membrane

1.5 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Base tile: submit duplicate 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile.
- .3 Floor tile: submit duplicate 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile.
- .4 Wall tile: submit duplicate sample panels of each colour, texture, size, and pattern of tile.
- .5 Grout: Provide samples from standard colour range.
- .6 Accessories:

1.6 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 damage.
- .4 Store cementitious materials on a dry surface.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .2 Collect and separate for disposal packaging material for recycling in accordance with Waste Management Plan.
- .3 Unused adhesive, sealant and coating materials must be disposed of at an official hazardous material collections site as approved by the Consultant.

- .4 Unused adhesive, sealant and coating materials must not be disposed of into the sewer system, into streams, lakes, onto the ground or in other location where it will pose a health or environmental hazard.
- .5 Broken porcelain materials must be diverted from landfill.

1.8 ENVIRONMENTAL CONDITIONS

- .1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12 °C for 48 h before, during, and 48 h 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 35°C.
- .4 Maintain adequate ventilation where work of this section generates toxic gases or where there is a risk of raising relative humidity levels that could damage building finishes and assemblies.

1.9 EXTRA MATERIAL

- .1 Provide maintenance materials in accordance with Section 01 77 00 – Project Closeout.
- .2 Provide minimum 2% 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.

1.10 QUALITY CONTROL

- .1 Provide the following as part of base contract:
 - .1 Third Party TTMAC-Certified inspection services for Tiles Installation:
 - .1 Contact:
 - .1 TTMAC Inspection Request
 - .2 163 Buttermill Avenue, Unit 8, Concord Ontario
 - .3 Phone: 905.660.9640
 - .4 E-Mail: association@ttmac.com
 - .2 Provide Inspection Report for Owner and Consultant records.
 - .2 Manufacturer's review and reports of the following:
 - .1 Waterproof membrane installation.
 - .1 Provide 3 written reports reviewing existing condition, installation progress and final report indicating Work is in accordance with Manufacturer's guidelines.
 - .2 Tile installation

- .1 Provide 3 written reports reviewing existing condition, installation progress, confirmation of quality and quantity of tile installation and final report indicating Work is in accordance with Manufacturer's guidelines.
- .3 Flood Test of waterproof membrane
 - .1 Conduct flood test in accordance with ASTM D5957 "Flood Test Horizontal Waterproofing Installation" by certified Third Party Testing and Inspection Agency.
 - .2 If flood test indicates openings or workmanship which would result in water leakage, the General Contractor is to be responsible for coordinating repair or reapplication of waterproofing until a successful test is obtained.
 - .3 Submit formal written report(s) on Inspection Agencies letter head for Consultant and Owner records.
- .2 Repeat inspection tests as many times as required for completion of Work in accordance with Contract Documents and Manufacturer's guidelines at no extra cost to the Contract.

Part 2 Products

2.1 Approved Manufacturers/Suppliers

- .1 Olympia Tile International Inc. 1000 Lawrence Avenue West, Toronto, Canada Tel. 416 785 6666
- .2 Stone Tile International Inc., 834 Caledonia Road, Toronto, Canada, Tel. 416-515-9000
- .3 The tile products identified indicates color type and size.

2.2 FLOOR TILE

- .1 TYPES:
 - .1 General: Mosaic, anti-slip TTMAC R10 textured, matte finish, in a range of colors, with associated cove base, inside-outside corners and trim, 2"x2".
 - .2 "FT-1" Porcelain tile: Stone Tile CE.SI Colori Bindo (anti-slip grey)
 - .3 "FT-2" Porcelain tile: Stone Tile CE.SI Colori Cloro (full body light blue)
 - .4 "FT-3" Porcelain tile: Stone Tile CE.SI Colori Bobbio (anti-slip deep blue)
 - .5 Accent: "FT-4" Porcelain tile: CE.SI Colori Iodio (full body red)
 - .6 Existing Pool Tile Repair: "FT-5, FT-6A" review and match existing tile type. Where a tile match cannot be determined, Olympia Tile Ontario Series "secura" with grit finish to be provided upon Consultant Approval.
 - .7 Existing Pool Tile Repair: "FT-6b" review and match existing tile type. Where a tile match cannot be determined, Olympia Tile Ontario Series "black colored" with grit finish to be provided upon Consultant Approval.

2.3 WALL TILE**.1 TYPES:**

- .1 General: Rectangular, gloss finish porcelain or ceramic tile, in a range of colors, 2'-0" x 4'-0" or as noted, with associated inside-outside round corners and trim.
 - .1 "WT-1" Porcelain tile: Stone Tile CE.SI Colori Alabastro. Edge trim to suit application.
 - .2 "WT-2A" Porcelain tile: Stone Tile CE.SI Colori Mela, Edge trim to suit application.
 - .3 "WT-2B" Porcelain tile: Stone Tile CE.SI Colori Aloe, Edge trim to suit application.
 - .4 "WT-3A" Porcelain tile: Stone Tile CE.SI Colori Baia, Edge trim to suit application.
 - .5 "WT-3B" Porcelain tile: Stone Tile CE.SI Colori Berillo, Edge trim to suit application.
 - .6 "WT-3C" Porcelain tile: Stone Tile CE.SI Colori Navy, Edge trim to suit application.

2.4 COVE BASE TILE**.1 TYPES:**

- .1 Same as "Floor Tile" type; provide cove base and inside/outside corner trims to suit.
- .2 Identified on drawings as "CB-X" where 'X' denotes corresponding Floor Tile type.

2.5 WATERPROOF MEMBRANE

- .1 Manufacturer/Supplier: MAPEI Americas, 95 Walker Drive, Brampton, Ontario, Canada, L6T 4H6; Tel: 905-799-2663
- .2 Waterproof Membrane
 - .1 General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
 - .1 Product: Subject to compliance with requirements, provide MAPEI Corporation materials.
 - .2 Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.
 - .1 Product: Subject to compliance with requirements, provide MAPEI Corporation Mapelastic AquaDefense.

2.6 SETTING MATERIALS

- .1 Improved Modified Dry-Set Cement Mortar: ANSI A118.15-A118.11 and ISO 13007; C2ES2P2.

- .1 Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerabond and Keralastic System".
- .2 Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile, Rapid Setting ANSI A118.15-A118.11 and ISO 13007; C2TFS2P2.
- .1 Product: Subject to compliance with requirements, provide MAPEI Corporation "Granirapid System".

2.7 BOND COAT

- .1 Dry set Portland cement mortar: to ANSI A108.1.
- .2 Organic adhesive: to ANSI A136.1 1999, Type 1 or 2. (Interior Wall Tiles)
- .3 Latex Portland Cement mortar: to ANSI A108.1, two-component universal dry-set mortar. (Interior Wall Tiles + Exterior Floor Tiles)

2.8 GROUT

- .1 Premium Epoxy Mortar and Grout: ANSI A118.3 and ISO 13007; R2Tand RG
 - .1 Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerapoxy CQ"
 - .2 Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D.

2.9 ACCESS PANELS

- .1 "AP-1" 12 x 12 Access Panels suitable for masonry and tile overlay installation, keyed type; installed on wall.
 - .1 Approved Manufacturer: Nystrom Tile Ready Access Door Part # RUT/RUW or Consultant approved equivalent.
 - .2 Location: installed in Universal Washroom and Watercloset coordinate final location with PLB contractor.
- .2 Ap-2:
 - .1 Approved Manufacturer: Bauco Softline, 12" x 12" or consultant approved equivalent.
 - .2 Location: coordinate final location with PLB contractor.

2.10 THRESHOLDS

- .1 T-1: Schluter Reno-Ramp K or Schluter Reno-U. Site Verify existing adjacent tile condition and concrete topping requirements.
- .2 T-2: 3/4hr fire rated threshold, labelled by KNC or approved equivalent, CT-64SS
- .3 T-3: half round threshold by CR Laurence or approved equivalent, 1/4" high, SDT980BA

2.11 ACCESSORIES

- .1 Waterproofing Membrane: Load bearing, liquid applied membrane meeting requirements of ANSI A118.12/A118.10. Thickness as recommended by manufacturer to accommodate in-plane substrate movement of 3mm. In thin set applications meeting or exceeding requirements of ANSI 108.1.
- .2 Reinforcing Mesh: Welded wire fabric [50 x 50mm] mesh opening, fabricated from 16mm thick galvanized steel wire.
- .3 Metal lath: Expanded steel lath, galvanized 1.4 kg/m³ meeting or exceeding requirements of ASTM C847.
- .4 Latex Additive: Formulated for use in Portland cement mortars and grouts
- .5 Water: Potable, clean and free of chemicals and contaminants detrimental to mortar and grout mixes.
- .6 Joint Sealant: in accordance with Section 07 92 00 - Joint Sealing.
- .7 Sealer: Meeting or exceeding requirements of CAN/CGSB 25.20, as recommended by tile manufacturer.
- .8 Anti-slip floor sealer and protective coating: to tile, stone and grout to manufacturers recommendations.
 - .1 Provide Anti-slip floor sealer as required or instructed by Owner and Consultant.

2.12 MIXES

- .1 Proportion and mix materials in accordance with manufacturer's most current written instructions and applicable ANSI standards.
- .2 Portland cement:
 - .1 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.
 - .2 Mortar Bed for Walls (by volume): Mix 1 part Portland cement, 4 parts sand, and latex additive where required by TTMAC Detail.
 - .3 Scratch Coat (by volume): Mix 1 part Portland cement, 4 parts sand, and latex additive where required by TTMAC Detail.
 - .4 Bond or setting coat: 1 part Portland cement, 1/3 part hydrated lime, 1 part water. Include latex additive where required by TTMAC Detail.
- .3 Dry set mortar: mix to manufacturer's instructions.
- .4 Organic adhesive: pre-mixed.
- .5 Mix bond and levelling coats, and grout to manufacturer's instructions.

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

2.13 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 2016-17, "Porcelain Tile", except where specified otherwise.
- .2 Apply tile 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 3.2 mm (1/8") wide, plumb, straight, true, even and flush with adjacent tile. 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 Make internal angles square, external angles with trim accessory.
- .9 Use trim accessories to edged tiles at termination of wall tile panels, except where panel abuts projecting surface or differing plane.
- .10 Install divider strips at junction of tile flooring and dissimilar materials.
- .11 Allow minimum 24 h after installation of stone, before grouting.
- .12 Clean installed tile surfaces after installation and grouting cured.
- .13 Make control joints at 3 m in each direction nor where indicated. Make joint width same as tile joints. Use purpose made accessories. Keep building expansion joints free of mortar and grout.
- .14 New mortar to align with high point of existing tile, so that new wall and floor tile is flush with existing. New mortar to have a 2% slope towards the new drains,

with slopes to be confirmed with consultant and manufacturer on site before the application of new waterproofing membrane.

3.2 WALL TILE (INTERIOR)

- .1 Install in accordance with TTMAC detail 303W-2016-2017 "Tile installed over masonry or concrete walls – thin-set method-interior" with waterproofing membrane.

3.3 FLOOR TILE (INTERIOR)

- .1 Install in accordance with TTMAC detail 310F-2016-2017 "Tile installed on interior cement mortar bed on concrete slab" with waterproofing membrane.
- .2 Coordinate with Plumbing Contractor for installation of floor drains and waterproof membrane tie-in.
- .3 Slope to drain min. 2% as indicated on drawings

3.4 BASE TILE (INTERIOR)

- .1 Install in accordance with TTMAC detail 303W-2016-2017 and in accordance with tile manufacturer's recommendations.

3.5 DRAINAGE SYSTEMS

- .1 Install in accordance with TTMAC detail 326DR-2016-2017 "Drainage Systems Interior/Exterior"

3.6 MOVE AND CONTROL JOINTS

- .1 Install in accordance with 301MJ-2016-2017 "Movement Joints for Tile Installations"
- .2 Refer to structural drawings for locations of existing joints. Where not identified, control joints are located at every beam as noted by "reference grid lines" on architectural drawing. Site verify locations and quantities and report back to Consultant for record.

3.7 SCHEDULE

- .1 Refer to Floor Finish Plan, floor detail drawings and interior elevations for layout, quantity and type.

END OF SECTION