PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

1. Conform to Sections of Division 1 as applicable.

1.2 REFERENCES

1. ANSI A118.4 – Latex-Portland Cement Mortar.

2. ANSI A118.7 – Polymer Modified Grout for Wall Tile

3. ASM B221 – Extruded Aluminum

4. ASTM C144 – Aggregate for Masonry Mortar.

5. ASTM C207 – Hydrated Lime for Masonry Purposes.

6. ASTM C568 – Limestone Dimension Stone.

7. CAN/CSA A5/A8/A362 – Portland Cement / Masonry Cement / Blended Hydraulic Cement.

8. TTMAC (Terrazzo Tile & Marble Association of Canada: Tile Specification Guide 09300.

1.3 SUBMITTALS

1. Refer to Submission procedures.

2. Shop Drawings:

    1. Indicate layout, and pattern, and relationship of units.

    2. Include locations and details for all proposed control joints.

    3. Indicate joints surrounding protruding fixtures and project-formed details.

3. Samples:

    1. One (1) full size sample of tile.
    2. Finish samples including Antique Honed, Antique Polished, Honed, Polished, Smooth Sanded, Sandblasted.
    3. 300 x 300 mm size panel with coloured grout applied, mounted to 19 mm thick plywood or particleboard back. Provide sealer on ½ of sample and label accordingly.

4. Samples:

    1. Special installation requirements.

2. Sealer Product Data.

5. Maintenance Requirements: Submit two printed copies of TTMAC maintenance recommendations to Owner.

1.4 QUALITY ASSURANCE

1. Perform Work in accordance with TTMAC manual as amended by this section.

2. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten years' documented experience.

3. TTMAC Member Installer: A member of TTMAC and a company specializing in performing the work of this section with minimum five years' documented experience or;

4. Installer: A company specializing in performing the work of this section with minimum ten years' documented experience.

1.5 MOCK-UP

1. Provide mock-up including stone, joint grouting, and accessories for the following:

1. 1 x 1 m interior stone floor tile and

2. Interior stone stair treads at all different substrate types.

2. Locate where directed.

3. Mock-up may not remain as part of the Work.

1.6 PRE-INSTALLATION MEETING

1. Pre-installation meeting.

2. Convene one week before starting work of this section.

1.7 DELIVERY, STORAGE AND PROTECTION

1. Refer to transport, handle, store and protect products.

2. Protect surfaces with wrapping.

1.8 ENVIRONMENTAL REQUIREMENTS

1. Refer to environmental conditions affecting products on site.

2. Do not install tile at a temperature less than 12 degrees C.

3. Maintain those temperatures until cementitious materials have fully cured.

4. Do not apply epoxy mortar and grouts at temperatures below 20 degrees C. or above 35 degrees C.

1.9 COORDINATION

1. Coordination with other work having a direct bearing on this section.
2. Coordinate the Work with installation of structural and miscellaneous metals substrate.

PART 2 - PRODUCTS

2.1 MATERIALS

1. Stone Tile (ST): 'Algonquin Limestone': Owen Sound Ledgerock, Fleuri Cut, ASTM C568, Category III – High Density:

    1. Sizes: 20mm (¾") thickness. Large format custom sizes at stair landings. Refer to plans and detail plans for layout dimensions and installation details. Dimensions to be coordinated with stair shop drawings.

    2. Finish: Antique Honed, Antique Polished, Honed, Polished, Smooth Sanded, Sandblasted; selection to be made by Consultant after award of contract based on submitted samples.

    3. Absorption by weight: 2.27%

    4. Density: 156.7 lbs./cu.ft.

2. Stone Stair Treads (SST): 'Algonquin Limestone': Owen Sound Ledgerock, Fleuri Cut, ASTM C568, Category III – High Density:

    1. Sizes: 38mm (1 ½") thickness. Full width and length (no exposed joints). Large format custom sized stair treads. Refer to stair plans and details for layout dimensions and installation details. Dimensions to be coordinated with stair shop drawings.

    2. Finish: Antique Honed, Antique Polished, Honed, Polished, Smooth Sanded, Sandblasted; selection to be made by Consultant after award of contract based on submitted samples.

    3. Absorption by weight: 2.27%

    4. Density: 156.7 lbs./cu.ft.

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

4. 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.

5. 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.

6. 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. TRANSITION STRIP AND EDGE PROTECTION TRIMS

1. Manufacturer: Schlüter Systems Canada Inc., Point-Claire QC, www.schluter.com

2. Product Requirements: Product Options – Substitutions: Not permitted.

3. Tile Edge Protection Trim: ASTM B221 Extruded aluminum, 6463-T5 alloy; profile and height as indicated; with integral perforated anchoring leg for setting the strip into setting material.

4. Height: as required to suit application.

5. Material and Finish: Clear Satin Anodized Aluminum: AE

6. Products: Schlüter-SCHIENE, AE 100'

4. Water: Clean, cold and potable.

5. Sealant and Backing Materials: Colour selected from full range to match grout, sanded to match grout (where applicable).

6. Perimeter Sealant: Silicone type as specified.

7. Sealant Used Within Tile Field: Silicone type as specified.

8. 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.

9. 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.

4. SETTING SYSTEMS

1. Wall Tile General: Fast Setting, thin-set, one step, two component liquid latex mixed with factory blended mortar. ANSI A118.4 Latex Modified. All components supplied by one manufacturer.

1. Mortar Materials: factory polymer additive mixed with factory blended mortar.

2. Manufacturers: MAPEI Corporation, Product: 'MAPEI White GraniRapid System'

5. MORTAR AND GROUT MANUFACTURERS

1. MAPEI-Canada, Brampton, ON (800) 361-9309, www.mapei.com

2. Product Options. Acceptable manufacturers offering equivalent products:

1. TEC Specialty Construction Brands Inc., Arlington Heights IL, USA www.tecspecialty.com distributed by Centura Floor and Wall Fashions www.centura.ca

2. Laticrete International Inc., Bethany, CT, USA 800-243-4733, www.laticrete.com

3. Provide products from only one manufacturer.

6. MORTAR MATERIALS

1. Portland Cement: to CAN/CSA A5/A8/A362, Type 10.

2. Hydrated Lime: to ASTM C207, Type S.

3. Sand: to ASTM C144, passing 16 mesh.

4. Latex-Portland Cement Mortar: to ANSI A118.4.

7. GROUT MATERIALS

1. Grout: ANSI A118.7, Polymer-Modified Grout for Wall Tile.

2. Manufacturers: MAPEI Corporation, Product 'ULTRACOLOUR PLUS'.

8. GROUT MIX

1. Mix and proportion pre-mix setting bed and grout materials in accordance with manufacturer's instructions.

PART 3 - EXECUTION

1. EXAMINATION

1. Verification of existing conditions before starting work.

2. Ensure that substrate surface flatness conforms to levels and slopes required to allow installation of tile.

2. PREPARATION

1. Thoroughly clean substrate surfaces to receive tile finish, to ensure removal of all grease, oil, or dust film.

2. Pre-seal tiles on all applicable sides as recommended by Stone supplier, prior to installation.

3. Consultant to confirm application and extent of Sealer with Enhancer as recommended by Stone supplier, prior to installation.

3. INSTALLATION

1. Install materials to requirements of TTMAC Tile Specification Guide.

2. Fit tile units around corners, fixtures, drains and other built-in objects, maintain uniform joint appearance.

3. Make cut edges smooth, even and free from chipping. Do not hand-split tile.

4. Lay tile units according to drawings and patterns so that perimeter and all cut tile are no less than half size.

5. Clean backs of tiles of loose particles or dust; back-butter tiles to enable 100 percent bond coverage before setting.

6. Set tile units:

    1. in place while bond coat is wet and tacky, prior to skinning over,

    2. slide tile back and forth to ensure a positive full-surface bond,

    3. set to level field surface; slope slightly to floor drains.

    4. avoid edge lip misalignment.

7. Clean excess mortar from surface prior to final set.

8. Sound tiles after setting materials have cured and replace hollow sounding tile before grouting.

9. Keep 2/3 of the depth of grout joints free of setting material.

4. CONTROL JOINTS

1. Install control and expansion joints in tile work in accordance with TTMAC Detail 301EJ.

2. Place control joints at minimum 6000mm on centre.

3. Keep control and expansion joint spaces free of setting materials.

5. GROUTING

1. Allow proper setting time prior to grouting.

2. Force grout into joints to ensure dense finish.

3. Remove excess.

6. ERECTION TOLERANCES

1. Level tile surface to a 1.0mm tolerance over a 3 mm joint.

2. Lippage: max 1.5mm.

7. CLEANING

1. Clean excess mortar from the surfaces before they harden and as work progresses. Do not contaminate face of tile or open grout/caulk joints while cleaning.

End of Section 09 30 33