

**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Section 09 21 16 - Gypsum Board Assemblies
- .2 Section 07 92 10 - Joint Sealing

**1.2 REFERENCES**

- .1 American National Standards Institute (ANSI)
  - .1 ANSI A108/ A118/ A136.1: 2005, Standards for the Installation of Ceramic Tile (Includes ANSI A108.01-.02, A108.1A-C, 108.4-.6, 108.8-.17, A118.1, A118.3-.12, A136.1).
  - .2 CTI A118.6, Specification for Ceramic Tile Grouts (included in ANSI A108.1).
- .2 American Society for Testing and Materials (ASTM International) International
  - .1 ASTM C144, Standard Specification for Aggregate for Masonry Mortar.
  - .2 ASTM C 207, Standard Specification for Hydrated Lime for Masonry Purposes.
  - .3 ASTM C847, Standard Specification for Metal Lath.
  - .4 ASTM C979, Standard Specification for Pigments for Integrally Coloured Concrete.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34-M, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .2 CGSB 71-GP-22M Adhesive, Organic, for Installation of Ceramic Wall Tile.
  - .3 CAN/CGSB-75.1-M, Tile, Ceramic.
  - .4 CAN/CGSB-25.20, Surface Sealer for Floors.
- .4 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-A3000, Cementitious Materials Compendium (Consists of A5, A8, A23.5, A362, A363, A456.1, A456.2, A456.3).
  - .2 CSA A123.3-05, Asphalt Saturated Organic Roofing Felt.
- .5 Terrazzo Tile and Marble Association of Canada (TTMAC)
  - .1 Tile Specification Guide 09300, Tile Installation Manual.
  - .2 Tile Maintenance Guide - latest version.

**1.3 PRODUCT DATA**

- .1 Submit product data in accordance with Division 1 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 Dry-set Portland cement mortar and grout.
  - .5 Divider strip.
  - .6 Elastomeric membrane and bond coat.

- .7 Reinforcing tape.
- .8 Levelling compound.
- .9 Latex-Portland cement mortar and grout.
- .10 Commercial Portland cement grout.
- .11 Organic adhesive.
- .12 Slip resistant tile.
- .13 Waterproofing isolation membrane.
- .14 Fasteners.

#### 1.4 SAMPLES

- .1 Submit samples in accordance with Division 1 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 Trim shapes, bullnose cap and cove including bullnose cap and base pieces at internal and external corners of vertical surfaces, each type, colour, and size.
- .5 Adhere tile samples to 11 mm thick plywood and grout joints to represent project installation.

#### 1.5 DELIVERY, STORAGE AND HANDLING

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

#### 1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Division 1 Waste Management.
  - .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
  - .3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with applicable provincial and municipal regulations.
  - .4 Unused adhesive, sealant and coating materials must be disposed of at an official hazardous material collections site in accordance with applicable provincial and municipal regulations.
  - .5 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.
  - .6 Broken ceramic materials must be diverted from landfill to a local quarry or facility in accordance with applicable provincial and municipal regulations.
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**1.7 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 25°C.

**1.8 EXTRA MATERIAL**

- .1 Provide maintenance materials in accordance with Division 1.
- .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.

**Part 2 Products**

**2.1 CERAMIC TILE**

- .1 Acceptable Product:
- .2 Washroom:
  - .1 Marble Floor Tile: Euro Tile & Stone: travertine colour AMBRA, finish: natural matte, or preapproved equivalent.
  - .2 Baseboard: Euro Tile & Stone: travertine colour AMBRA, finish: natural matte, or preapproved equivalent.

**2.2 WATERPROOFING MATERIALS**

- .1 Floor waterproofing:
  - .1 Acceptable product: Schluter Kerdi bonded waterproofing and vapour-retardant membrane, or preapproved equivalent.

**2.3 MORTAR AND ADHESIVE MATERIALS**

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

**2.4 BOND COAT**

- .1 Dry set Portland cement mortar: to ANSI A108.1.
  - .2 Organic adhesive: to CGSB 71-GP-22M, Type 1 2 and ANSI A136.1.
  - .3 Latex Portland cement mortar: to ANSI A108.1, two-component universal dry-set mortar.
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## 2.5 GROUT

- .1 Colouring Pigments:
  - .1 Pure mineral pigments, lime proof and nonfading, complying with ASTM C979.
  - .2 Colouring pigments to be added to grout by manufacturer.
  - .3 Job coloured grout are not acceptable.
  - .4 Use in Commercial Portland cement Grout, Dry-Set Grout, and Latex-Portland Cement Grout.
- .2 Portland cement Grout: to ANSI A108.1.
  - .1 Use one-part white Portland cement to one-part white sand passing a number 30 screen.
- .3 Commercial Portland cement Grout: to CTI A118.6.
- .4 Latex-Portland Cement Grout: to ANSI A108.1, fast curing, high early strength, polymer-modified, stain resistant, sanded mix for floors, unsanded mix for walls and floors with polished tiles commercial tile grout.
- .5 Epoxy grout to ANSI A-118.3. Grout preparations shall conform to manufacturer's instructions.  
Acceptable material: Kerapoxy by Mapei.

## 2.6 ACCESSORIES

- .1 Sealant: in accordance with Section 07 92 10 - Joint Sealing.
- .2 Floor sealer and protective coating: to tile and grout manufacturers' recommendations.

## 2.7 MIXES

- .1 Portland cement: to CAN3-A5, type 10.
- .2 Sand: to ASTM C 144.
- .3 Hydrated lime: to ASTM C 207.
- .4 Latex additive: formulated for use in Portland cement mortar and thin set bond coat.
- .5 Water: potable and free of minerals which are detrimental to mortar and grout mixes.
- .6 Dry set mortar: to ANSI A118.1.
- .7 Organic adhesive: to CGSB 71-GP-22M, Type 1 2.
- .8 Select adhesives which demonstrate environmental responsibility and have the following characteristics: water based, water clean-up, low Volatile Organic Compound (VOC) content,
- .9 Thin set bond coat: mortar with latex additive.

## 2.8 PATCHING AND LEVELING COMPOUND

- .1 Portland cement base, acrylic polymer compound, manufactured specifically for resurfacing and levelling concrete floors. Products containing gypsum are not acceptable.
- .2 Have not less than the following physical properties:

- .1 Compressive strength - 25 MPa.
  - .2 Tensile strength - 7 MPa.
  - .3 Flexural strength - 7 MPa.
  - .4 Density - 1.9.
- .3 Capable of being applied in layers up to 50 mm thick, being brought to feather edge, and being trowelled to smooth finish.
- .4 Ready for use in 48 hours after application.

## 2.9 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, "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 Make internal angles square, external angles bullnosed.
- .9 Use bullnose 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 tiles, before grouting.
- .12 Clean installed tile surfaces after installation and grouting cured.
- .13 Make control joints where indicated. Make joint width same as tile joints. Fill control joints with sealant in accordance with Section 07 92 10 - Joint Sealing. Keep building expansion joints free of mortar and grout.

### 3.2 WATERPROOFING MEMBRANE

- .1 Install waterproofing membrane to entire floor surface in each washroom, as per manufacturer's instructions.

**3.3 FLOOR SEALER AND PROTECTIVE COATING**

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

**3.4 SPECIAL TRIMS**

- .1 At the following locations, install aluminum Schluter Profile System.
  - .1 At the junction of floor tile with dissimilar material.
  - .2 At the top of tile bases
  - .3 At all outside corners wall tiles
  - .4 At all locations where tile surfaces terminate so that the tile edge would otherwise remain to view.
  - .5 At all control joints.

**END OF SECTION**

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