

PART 1 - GENERAL

- | | | |
|------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>1.1 REFERENCES</u> | .1 | American National Standards Institute (ANSI)/Ceramic Tile Institute (CTI)
.1 ANSI A108/A118/A136-13, Specification for the Installation of Ceramic Tile (Includes ANSI A108.01, A108.02, A108.1A, A108.1B, A108.1C, A108.4, A108.5, A108.6, A108.8, A108.9, A108.9, A108.10, A108.11, A108.12, A108.13, A108.14, A108.15, A108.16, A108.17, A118.1, A118.3, A118.4, A118.5, A118.6, A118.7, A118.8, A118.9, A118.10, A118.11, A118.12, A118.13 and A118.15. |
| | .2 | American Society for Testing and Materials International (ASTM)
.1 ASTM C979/C979M-16, Specification for Pigments for Integrally Coloured Concrete. |
| | .3 | Canada Green Building Council (CaGBC)
.1 LEED Canada 2009 for Design and Construction-2010, LEED Canada 2009 for Design and Construction Leadership in Energy and Environmental Design Green Building Rating System Reference Guide. |
| | .4 | South Coast Air Quality Management District (SCAQMD), California State
.1 SCAQMD Rule 1168-05, Adhesives and Sealants Applications. |
| | .5 | Terrazzo Tile and Marble Association of Canada (TTMAC)
.1 Tile Specification Guide 09 30 00 2016/2017, Tile Installation Manual.
.2 Tile Maintenance Guide 2000. |
| <u>1.2 ACTION AND INFORMATIONAL SUBMITTALS</u> | .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 Divider strip. |
-

- | | | | |
|-----------------------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.2 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd) | .2 (Cont'd) | .1 (Cont'd) | .3 Elastomeric membrane and bond coat.
.4 Reinforcing tape.
.5 Levelling compound.
.6 Latex cement mortar and grout.
.7 Waterproofing isolation membrane.
.8 Fasteners. |
| | .3 | Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
.1 Base tile: submit duplicate, 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile.
.2 Floor tile: submit duplicate, 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile.
.3 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.
.4 Adhere tile samples to 11 mm thick plywood and grout joints to represent project installation. | |
| | .4 | Sustainable Design Submittals:
.1 LEED Canada Submittals: in accordance with Section 01 35 21 - LEED Requirements. | |
| 1.3 QUALITY
ASSURANCE | .1 | Quality Assurance Submittals:
.1 Manufacturer's Instructions: manufacturer's installation instructions. | |
| 1.4 SUSTAINABLE
REQUIREMENTS | .1 | Materials and products in accordance with Section 01 35 21 - LEED Requirements. | |
| 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. | |
| | .2 | Develop Construction Waste Management Plan related to Work of this Section and in | |
-

1.5 DELIVERY,
STORAGE AND
HANDLING
(Cont'd)

- .2 (Cont'd)
accordance with Section 01 35 21 - LEED
Requirements.
- .3 Packaging Waste Management: remove for reuse
or return of pallets, crates, padding,
banding, and packaging materials as specified
in Construction Waste Management Plan in
accordance with Section 01 74 21 -
Construction/Demolition Waste Management and
Disposal and Section 01 35 21 - LEED
Requirements.

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.

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

- 2.1 FLOOR TILE .1 Porcelain tile: to CAN/CGSB-75.1, ANSI A118.4, Type 7, Class MR 1 300 x 300 x 8 mm size, square edges, slip resistant surface, unglazed 1 pattern, 1 colour as selected by Departmental Representative.
.1 Recycled Content: minimum 20% pre-consumer.
- 2.2 WALL AND CEILING TILE .1 Ceramic tile: to CAN/CGSB-75.1, Type 5, Class MR 1, approximately 600 x 150 x 8 mm size WITH FEATURE TILE 150 X 300 to suit layout in drawings, square edges, glazed surface, pattern as noted in drawings, 2 colours as selected by Departmental Representative. Matching edge trim to suit application.
.1 Recycled Content: minimum 20% pre-consumer.
- 2.3 BASE TILE .1 Base: type, size, colour and texture to match wall material.
.1 Recycled Content: minimum 20% pre-consumer.
- 2.4 TRIM SHAPES .1 Conform to applicable requirements of adjoining floor and wall tile.
.2 Use trim shapes sizes conforming to size of adjoining field wall tile, including existing spaces, unless specified otherwise.
.3 Internal and External Corners: provide trim shapes as follows where indicated.
.1 Provide plastic J-trim for external corners including edges.
.2 Butt tiles at internal corners.
-

2.5 MORTAR AND
ADHESIVE MATERIALS

- .1 Cement: to CSA-A5, type 10.
- .2 Sand: to ASTM C 144, passing 16 mesh.
- .3 Hydrated lime: to ASTM C 207, 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:
 - .1 Maximum VOC limit 65 g/L to SCAQMD Rule 1168.

2.6 BOND COAT

- .1 Latex Cement mortar: to ANSI A108.1, two-component universal dry-set mortar.

2.7 GROUT

- .1 Colouring Pigments:
 - .1 Pure mineral pigments, limeproof and nonfading, complying with ASTM C 979.
 - .2 Colouring pigments to be added to grout by manufacturer.
 - .3 Job coloured grout are not acceptable.
 - .4 Colour selected by Departemental Representative from manufacturer's full range.
- .2 Latex 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.

2.8 ACCESSORIES

- .1 Cleavage plane: polyethylene film to CGSB 51-34 and ANS A118.12.
 - .2 Metal lath: to ASTM C 847 galvanized painted finish, 10 mm rib at 2.17 kg/m².
 - .3 Transition Strips: purpose made metal extrusion; stainless steel or anodized aluminum type.
-

- 2.8 ACCESSORIES
(Cont'd)
- .4 Reducer Strips: purpose made metal extrusion; stainless steel or anodized aluminum type; maximum slope of 1:2.
 - .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 301MJ.
 - .6 Sealant:
 - .1 Sealants: maximum VOC limit 250 g/L to SCAQMD Rule 1168.
 - .7 Floor sealer and protective coating: to tile and grout manufacturers recommendations.
- 2.9 MIXES
- .1 Dry set mortar: mix to manufacturer's instructions.
 - .2 Mix bond and levelling coats, and grout to manufacturer's instructions.
 - .3 Adjust water volumes to suit water content of sand.
- 2.10 PATCHING AND
LEVELLING COMPOUND
- .1 Cement base, acrylic polymer compound, manufactured specifically for resurfacing and leveling 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.
-

- 2.11 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

- 3.1 MANUFACTURER'S INSTRUCTIONS
- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.
- 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 to clean and sound surface.
 - .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.
-

- | | | |
|------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>3.2 WORKMANSHIP</u>
<u>(Cont'd)</u> | .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 hours 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 00 - Joint Sealants. Keep building expansion joints free of mortar and grout. |
| <u>3.3 WALL TILE</u> | .1 | Install in accordance with TTMAC Detail 305W Tile Installed on Coated Glass Matt Backer Board. |
| <u>3.4 FLOOR TILE</u> | .1 | Install in accordance with TTMAC detail 311F Tile Bonded to Concrete Slab - Thin-Set Method. |
| <u>3.5 FLOOR SEALER AND PROTECTIVE COATING</u> | .1 | Apply in accordance with manufacturer's instructions. |
| <u>3.6 FIELD QUALITY CONTROL</u> | .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. |
-

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