

1 ASSEMBLY - GENERAL

- 1.1 The work of this section includes the provision of all design, labour, materials, equipment and services required to fabricate and install floor finishes as required for a complete project. The work includes, but is not necessarily limited to, the items referenced herein:
- 1.1.1 Concrete floor treatment on cured concrete
 - 1.1.2 Ceramic tile finish systems
 - 1.1.3 Resilient tile and sheet flooring
 - 1.1.4 Terrazzo flooring system.
 - 1.1.5 Epoxy coatings
- 1.2 Refer to Section A1030 - slabs on grade for concrete floor hardener and other surface finishing requirements performed on fresh concrete.
- 1.3 Refer to Section C2020 - Stair Finishes for flooring requirements on treads and landings.
- 1.4 Refer to Section C3040 - Interior Painting for field applied paint finish requirements.
- 1.5 Qualifications: Applicator's shall be licensed to install manufacturer's product and have experience in the successful installation of the systems specified in this section for a minimum of 5 years.
- 1.6 Refer to space data sheets for floor finishes.
- 1.7 Environmental Requirements: Do not apply wall finishes in areas where dust is being generated. Conform to manufacturer's recommended air temperatures, relative humidity, and substrate moisture content at installation area before, during and after application.

2 ASSEMBLY DESIGN CRITERIA

- 2.1 Comply with flame spread requirements of OBC. Provide finishes that are compatible and consistent with each other to suit level of finish specified in this section. Select from readily available stock from suppliers with proven delivery record.
- 2.2 Provide waterproof membrane behind floor tiles subject to water exposure (i.e. showers).
- 2.3 Where applicable extend resilient tile and/or terrazzo floors from adjacent corridor into reception areas.
- 2.4 Provide an effective waterproof membrane under all slab on grades specified to receive resilient floors.

- 2.5 Allow for a minimum of 2 field and 2 accent colours in tile installation. Allow for a minimum of 15% accent tile in floor patterning.
- 2.6 Select and use a complete system from the same manufacturer to suit performance level required.
- 2.7 Generally, provide terrazzo flooring on all ground floor level public areas including corridors, entrances, lobbies, stairwells, elevator cab, washroom/shower/locker room areas, reception areas and related spaces. Provide terrazzo flooring on second floor public areas including bridge link and corridors.
- 2.8 Provide anti-slip flooring surface treatments to all areas with sloping or inclined surfaces.

3 ASSEMBLY COMPONENTS

3.1 CERAMIC FLOOR TILE

3.1.1 General:

- 3.1.1.1 Submittals: Submit samples in accordance with Section 01340 - Shop Drawings, Product Data, Samples and Mock-ups. Submit 300 x 300mm sample panels of each colour, texture, size, and pattern of tile. Submit material and colour boards to fully illustrate compatibility of proposed wall, floor, ceiling, door and other special finishes.
- 3.1.1.2 Warranties: Provide a 1 year extended warranty against defects in materials and quality of work for a total warranty period of 2 years.
- 3.1.1.3 Operations & Maintenance Manuals: provide material and product data for incorporation into Section 01730.
- 3.1.1.4 Maintenance Material: Provide minimum 2% of each type and colour of tile specified.

1.1.1 Design:

- 1.1.1.1 Do tile work in accordance with Installation Manual [200-1979], "Ceramic Tile", produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.

1.1.2 Materials/Finishes:

- 1.1.2.1 Ceramic floor tile: to [CAN2-75.1-M77], Type 7, Class MR 2, cushioned edges, slip resistant surface. Matching coved base, 100mm high. Acceptable materials: [Olympia-Spectra Stone Type IV porcelain unglazed quarry tile, 150 x 150mm size, or Ramca Grespor Series, 200mm x 200mm. Or Centura Cerdisatone Grantiti, 200 x 200mm].

- 1.1.2.2 Water: potable and free of minerals which are detrimental to mortar and grout mixes.
- 1.1.2.3 Dry set mortar: to *[ANSI A118.1-1985]*, *[Mapei kerabond with Keralastic polymer additive]*.
- 1.1.2.4 Organic adhesive: to *[CGSB 71-GP-22M+Amdt-Jun- 78]*, Type 2.
- 1.1.2.5 Thin set bond coat: as recommended by tile manufacturer.
- 1.1.2.6 Dry curing wall grout: as recommended by tile manufacturer.
- 1.1.2.7 Thin set system grout: *[Mapei keracolour/floor]*.
- 1.1.2.8 Grout preparation: to manufacturers instructions. Grout colour selected by Consultant.
- 1.1.2.9 Thresholds: marble, 15mm thick, beveled two sides, honed finish to exposed surfaces, size to suit door opening and frame width.
- 1.1.2.10 Floor sealer and protective coating: to tile and grout manufacturers recommendations.
- 1.1.2.11 Dry set mortar: mix to manufacturer's instructions.
- 1.1.3 **Fabrication/Installation:**
 - 1.1.3.1 Apply tile or backing coats to clean and sound surfaces.
 - 1.1.3.2 Fit tile around corners, fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.
 - 1.1.3.3 Maximum surface tolerance 1:800.
 - 1.1.3.4 Make joints between tile uniform and approximately 1.5mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.
 - 1.1.3.5 Lay out tiles so perimeter tiles are minimum 1/2 size.
 - 1.1.3.6 Sound tiles after setting and replace hollow- sounding units to obtain full bond.
 - 1.1.3.7 Make internal angles square, external angles bullnosed.
 - 1.1.3.8 Use bullnose edged tiles at termination of wall tile panels, except where panel abuts projecting surface or differing plane.
 - 1.1.3.9 Install divider strips at junction of tile flooring and dissimilar materials.
 - 1.1.3.10 Allow minimum 24 h after installation of tiles, before grouting.
 - 1.1.3.11 Clean installed tile surfaces after installation and grouting cured.

- 1.1.3.12 Apply floor sealers and protective coating in accordance with manufacturers instructions.
- 1.1.3.13 Waterproofing membrane: two-component polymer modified, fibre modified, flexible cementitious waterproofing mortar. Acceptable material: *[Mapei]*.

1.2 PORTLAND CEMENT TERRAZZO

1.2.1 **General:**

- 1.2.1.1 Submittals: Submit samples in accordance with Section 01340 - Shop Drawings, Product Data, Samples and Mock-ups. Submit duplicate 300 x 300 x 20mm thick samples of each colour terrazzo.
- 1.2.1.2 Submittals: Submit shop drawings in accordance with Section 01340 - Shop Drawings, Product Data, Samples and Mock-ups. Indicate layout of divider strips and expansion joints.
- 1.2.1.3 Warranties: *[Design Builder]* hereby warrants that terrazzo surfaces will remain sealed, but for 5 years.
- 1.2.1.4 Provide maintenance data as set out in TTMAC publication for terrazzo work for incorporation into manual specified in Section 01730 - Operation and Maintenance Manual.

1.2.2 **Design:**

- 1.2.2.1 Provide terrazzo flooring complete with integral cove base, 100mm high, throughout all ground floor entrances, lobbies, stairwells, corridors, washrooms, change rooms, shower areas, and other public areas.
- 1.2.2.2 Do terrazzo work in accordance with CSC Architectural Specification Study on Terrazzo (Portland Cement) *[1984]*, produced in cooperation with Terrazzo, Tile and Marble Association of Canada (TTMAC), except where specified otherwise.

1.2.3 **Materials/Finishes:**

- 1.2.3.1 Cement: to *[CAN3-A5-M83]*, type 10 grey for underbed and white for topping.
- 1.2.3.2 Sand, fine and coarse aggregates to *[CAN3-A23.1-M77]*.
- 1.2.3.3 Marble chips: to *[CSA A194.1-196]* for uniformity, soundness and abrasion resistance. Grade chips in accordance with TTMAC standard.
- 1.2.3.4 Pigments: non-fading mineral pigments in selected colours.
- 1.2.3.5 Epoxy bonding agent: two components, epoxy resin and epoxy hardener conforming to following performance properties after cure schedule of 28 days at 25C.

- 1.2.3.6 Viscosity: mixed viscosity not less than 0.04 Pa or more than 0.5 Pa.
- 1.2.3.7 Gel time: not less than half hour at 20C.
- 1.2.3.8 Flexibility: Gardiner flexibility test, passes bending over 12mm mandrel, without cracking.
- 1.2.3.9 Elongation: [ASTM D2370-82], minimum 10%.
- 1.2.3.10 Bond strength: 2 MPa, with 100% concrete failure at minimum coverage, test concrete specimen minimum compressive strength 20 MPa.
- 1.2.3.11 Coverage: 0.3 L/m² minimum, dry film thickness not less than 0.2mm.
- 1.2.3.12 Divider strips: 3mm thick, zinc.
- 1.2.3.13 Accessories: base caps and base divider strips, separator strips, purpose made and of same material to match divider strips.
- 1.2.3.14 Reinforcing steel: billet steel, grade 300 plain bars to [CSA G30.12-M1977].
- 1.2.3.15 Welded steel wire fabric: to [CSA G30.5-M1983], 50 x 50 x 1.6 x 1.6mm wire, galvanized, in flat sheets only.
- 1.2.3.16 Slip sheet: polyethylene sheet to [CAN/CGSB-51.33-M80], Type 2, 0.05mm thick.
- 1.2.3.17 Non-slip aggregate: aluminum oxide of size and colour to match marble chips.
- 1.2.3.18 Non-slip inserts: zinc, 10 x 10 x 0.8mm thick, dove-tail shaped channels, with anchors.
- 1.2.3.19 Non-slip material for inserts: fine aluminum oxide and cement mixture in selected colours.
- 1.2.3.20 Curing compound: to manufacturers standard.
- 1.2.3.21 Cleaning compound: to TTMAC standard 1001.
- 1.2.3.22 Sealing compound: to TTMAC standard 2001.
- 1.2.3.23 Finishing compound: to TTMAC standard 3001.
- 1.2.3.24 Control joints: lamination of 3mm (14ga) zinc to both sides of 3mm wide black neoprene.
- 1.2.3.25 Slurry coat: cement and water mixed to creamy paste.
- 1.2.3.26 Underbed: 1 part cement to 4 parts sand by volume.
- 1.2.3.27 Terrazzo topping: to match standard TTMAC colour plate numbers, colours selected by [Design Builder]. Allow for a total of four (4) colours.

1.2.3.28 Epoxy bonded terrazzo: same mix as standard terrazzo topping. Allow for a total of four (4) colours.

1.2.4 **Fabrication/Installation:**

1.2.4.1 Apply terrazzo after concrete slabs have cured 28 days.

1.2.4.2 Install divider strips true and level to detailed pattern.

1.2.4.3 Install non-slip inserts on all sloped surfaces, ramps and stairs.

1.2.4.4 Slope finished terrazzo floors to drains.

1.2.4.5 Floating standard terrazzo: to TTMAC details.

1.2.4.6 Total thickness of floating terrazzo to be not less than 64mm thick.

1.2.4.7 Terrazzo bases: to TTMAC details and as required.

1.2.4.8 Terrazzo stairs: to TTMAC details and as required.

1.2.4.9 Clean, seal and finish terrazzo surfaces to TTMAC recommendations.

1.3 RESILIENT TILE

1.3.1 **General:**

1.3.1.1 Submittals: Submit samples in accordance with Section 01340 - Shop Drawings, Product Data, Samples and Mock-ups. Submit duplicate tile in size specified, 300mm long base.

1.3.1.2 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01730 - Operations and Maintenance Manuals.

1.3.1.3 Provide maintenance materials in accordance with Section 01730 - Operational and Maintenance Manual. Deliver one full box of each colour, pattern and type flooring material required for this project for maintenance use. Identify each box. Store where directed. Maintenance materials to be same production run as installed materials.

1.3.2 **Design:**

1.3.2.1 Not applicable.

1.3.3 **Materials/Finishes:**

1.3.3.1 Vinyl composition tile: to [CSA A126.1M 1984], Type A, 3.18mm thick. Static load limit: 75lbs/sq.in. integral colour and pattern through tile thickness, 300 x 300mm size, in standard colours selected by Consultant. Acceptable material: [Tarkett - Expressions and Basics Series or Domcor-Azrock Tile OR Armstrong standard Excelon tile or Amtico Fortress with colour through].

- 1.3.3.2 Resilient base: to [CAN/CSA-A126.5], Type 1, rubber, B-cove, maximum lengths possible and 100mm high x 3.18mm thick, including premoulded end stops and external corners for coved base only.
- 1.3.3.3 Primers and adhesives: as recommended by flooring manufacturer for specific material on applicable substrate, above, at or below grade.
- 1.3.3.4 Sub-floor filler and leveller: as recommended by flooring manufacturer for use with their product.
- 1.3.3.5 Metal edge strips: aluminum extruded, smooth, mill finish with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.
- 1.3.3.6 Sealer: type recommended by flooring manufacturer and approved by Owner before application.
- 1.3.3.7 Wax: to be provided by Owner.
- 1.3.3.8 Allow for the selection of eight (8) different colours from standard colour range.
- 1.3.3.9 Allow for the selection of four (4) different rubber base colours from standard colour range.
- 1.3.4 **Fabrication/Installation:**
- 1.3.4.1 Lay flooring with joints parallel to building lines to produce symmetrical tile pattern. Border tiles minimum half tile width.
- 1.3.4.2 Install flooring to square grid pattern with all joints aligned with pattern grain parallel for all units and parallel to length and/or width of room.
- 1.3.4.3 Cut tile and fit neatly around fixed objects.
- 1.3.4.4 Install feature strips and floor markings where required. Fit joints tightly.
- 1.3.4.5 Install flooring in pan type floor access covers. Maintain floor pattern.
- 1.3.4.6 Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.
- 1.3.4.7 Install metal edge strips at unprotected or exposed edges where flooring terminates.
- 1.3.4.8 Lay out base to keep number of joints at minimum. Base joints at maximum length available or at internal or premoulded corners.
- 1.3.4.9 Install straight and level to variation of 1:1000.
- 1.3.4.10 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.

- 1.3.4.11 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles. Wrap around toeless base at external corners.
- 1.3.4.12 Clean, seal and wax floor and base surface to flooring manufacturer's instructions and as approved by Owner.

1.4 CARPET

1.4.1 **General:**

- 1.4.1.1 Submittals: Submit duplicate 1m square pieces of each type carpet specified, duplicate 125 x 75mm pieces for each colour selected, 150mm lengths of carpet gripper and binder bars, in accordance with Section 01340.
- 1.4.1.2 Warranties: *[Design Builder]* hereby warrants that carpeting will provide specified level of appearance, subject to proper care and maintenance, but for ten years. Warranty shall specifically guarantee against deterioration of backing, delamination, failure of seams, stretching or wrinkling, fading or other defects of materials or workmanship detrimental to appearance or performance. Lifetime anti-static and no zipper.
- 1.4.1.3 Provide maintenance data for carpet maintenance for incorporation into Maintenance Manual specified in Section 01730.
- 1.4.1.4 Deliver 9m² of each type, pattern and colour of carpet required for this project for maintenance use. Store where directed. Clearly identify each roll. Maintenance materials to be same production run as installed materials.

1.4.2 **Design:**

- 1.4.2.1 Not applicable.

1.4.3 **Materials/Finishes:**

- 1.4.3.1 Carpets required to have flame spread rating or smoke developed classification to be tested in accordance with *[ULC S102.2-1978]* for floor surface covering and be certified by ULC.
- 1.4.3.2 Woven carpet: to *[CGSB 4-GP-129]*.
- 1.4.3.3 Administration and Office Areas, Acceptable Materials:
- 1.4.3.4 *[Peerless International - Freedom 75701-AH, 100% nylon, solution dyed, 950g/m² with static control]*.
 - 1.4.3.4.1 *[Harding - Triathlon #42200, 100% nylon, solution dyed, 1017g/m² with static control]*.

- 1.4.3.4.2 [Crossley - 495 Madura, 100% nylon, solution dyed, 950g/m2 with static control].
- 1.4.3.4.3 [Kraus - Dominator, 100% nylon, solution dyed, 1,1017g/m2 with static control].
- 1.4.3.5 Corporate Classroom Areas, Acceptable Materials:
 - 1.4.3.5.1 Crossley - #016 Benchmark, 100% Dupont nylon, 32oz/yd2 with static control].
- 1.4.3.6 Carpet grippers: types recommended by carpet manufacturer.
- 1.4.3.7 Binder bars: aluminum finish of type recommended by carpet manufacturer.
- 1.4.3.8 Carpet base: of carpet to match adjacent carpet floor with serged "sewn" top edge, 100mm high.
- 1.4.3.9 Adhesive: recommended by carpet manufacturer.
- 1.4.3.10 Polyethylene film: to [CAN2-51.33-M80], Type 2, 0.15mm thick.
- 1.4.3.11 Concrete floor sealer: to [CGSB 25-GP-20M], Type 1.
- 1.4.3.12 Subfloor filler: white premix latex requiring only water to produce cementitious paste.
- 1.4.4 **Fabrication/Installation:**
 - 1.4.4.1 Install glue-down carpet in accordance with [CGSB 4-GP-156].
 - 1.4.4.2 Install carpeting in accordance with manufacturer's recommendations.
 - 1.4.4.3 Install carpeting after finishing work is completed but before demountable office partitions and telephone and electrical pedestal outlets are installed.
 - 1.4.4.4 Finish installation to present smooth wearing surface free from conspicuous seams, burring and other faults.
 - 1.4.4.5 Ensure colour, pattern and texture match within any one area.
 - 1.4.4.6 Install carpet grippers to conform to high and low spots in floor, using carpet gripper cement, concrete nails or approved stud driver. Use carpet grippers at walls and vertical surfaces; metal binder bars at exposed carpet edges.
 - 1.4.4.7 Install carpet in accordance with shop drawings. Hot melt seams and cross-joints. Maintain constant pile direction.
 - 1.4.4.8 Install carpet tightly and fit neatly around architectural, mechanical, electrical and furniture fitments, around perimeter of rooms into recesses, and around projections through floor.

- 1.4.4.9 Seal edges of cut-outs with binding method.
- 1.4.4.10 Install carpet base to match adjacent carpet flooring. Attach carpet to wall with adhesive. Neatly fit against floor carpet.

1.5 RESILIENT SHEET FLOORING

1.5.1 **General:**

- 1.5.1.1 Submittals: Submit samples in accordance with Section 01340 - Shop Drawings, Product Data, Samples and Mock-ups. Submit duplicate samples, 300 x 300mm sizes including all flooring accessories.
- 1.5.1.2 Warranties: *[Design Builder]* hereby warrants that resilient sheet flooring will provide specified level of appearance, subject to proper care and maintenance, but for 5 years. Warranty shall specifically guarantee against deterioration of backing, delamination, failure of seams, stretching or wrinkling, fading or other defects of materials or workmanship detrimental to appearance or performance.
- 1.5.1.3 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01730 - Operations and Maintenance Manuals.
- 1.5.1.4 Deliver 9m² of each type, pattern and colour of resilient flooring required for this project for maintenance use. Store where directed. Clearly identify each roll. Maintenance materials to be same production run as installed materials.

1.5.2 **Design:**

- 1.5.2.1 Provide an effective waterproof membrane under all slab on grades specified to receive resilient floors.
- 1.5.2.2 Provide integral coved bases where applicable.

1.5.3 **Materials/Finishes:**

- 1.5.3.1 Resilient rubber flooring: Dimensionally stable, homogeneous sheet rubber with 100% top-bottom wear surface, 4.75mm min thick, non-staining, non-discolouring and containing no asbestos fibres. Complete with integral cove base, 100mm high min. Acceptable Material (or equal): *[RCA Rubber Flooring Company, Flexi-Flor]*.
- 1.5.3.2 Resilient sheet safety flooring:
- 1.5.3.3 Dimensionally stable, plasticized vinyl with aluminum oxide grains with a glass fibre reinforcement.
- 1.5.3.4 2.0mm thick min, chemical resistant, high wear resistance and anti-slip performance.

- 1.5.3.5 Integral bacterial control agent throughout entire thickness of material.
- 1.5.3.6 Integral cove base, 100mm min high.
- 1.5.3.7 Locker Areas: Acceptable Material (or equal): [*Altro Prismatic, Altro Floors*].
- 1.5.3.8 Shower Areas: Acceptable Material (or equal): [*Altro Marine 20, Altro Floors*].
- 1.5.3.9 Resilient fitness flooring:
 - 1.5.3.9.1 Dimensionally stable, recycled tire rubber granules bound with an inert polyurethane binder, non-laminated.
 - 1.5.3.9.2 10mm thick min, high wear resistance, flame resistant and with anti-slip performance.
 - 1.5.3.9.3 Acoustically absorptive material and with colour stability.
 - 1.5.3.9.4 Fitness Areas: Acceptable Material (or equal): [*Sport Mat, Dinoflex Manufacturing Ltd*].
- 1.5.3.10 Accessories: Edge strips and trim as per manufacturer's recommendations.
- 1.5.3.11 Cleaners and sealers recommended by flooring manufacturer.
- 1.5.4 **Fabrication/Installation:**
 - 1.5.4.1 Apply adhesive uniformly using recommended trowel in accordance with flooring manufacturer's instructions.
 - 1.5.4.2 Install metal edge at unprotected or exposed edges where flooring terminates.
 - 1.5.4.3 Layout sheet flooring to produce a minimum number of seams. Border widths minimum 1/3 width of full material.
 - 1.5.4.4 Heat weld seams in resilient sheet flooring in accordance with manufacturer's instructions.
 - 1.5.4.5 Install base in accordance with manufacturer's instructions. Cope internal corners. Use premoulded external corner units.
 - 1.5.4.6 Cut flooring and fit neatly around fixed objects.
 - 1.5.4.7 Install feature strips and floor markings where required. Fit joints tightly.
 - 1.5.4.8 Install flooring in pan type floor access covers. Maintain floor pattern.
 - 1.5.4.9 Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.

- 1.5.4.10 Lay out base to keep number of joints at minimum. Base joints at maximum length available or at internal or premoulded corners. Install straight and level to variation of 1:1000.
- 1.5.4.11 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.
- 1.5.4.12 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles. Wrap around toeless base at external corners.
- 1.5.4.13 Clean, seal and wax floor and base surface to flooring manufacturer's instructions.

1.6 EPOXY FLOOR SYSTEMS & COATINGS

1.6.1 **General:**

- 1.6.1.1 Submittals: Duplicate 300 x 300 mm sample panels of each epoxy coating type, colour, and gloss specified.
- 1.6.1.2 Quality Assurance: The work of this section shall be executed by manufacturers with minimum 5 years experience in manufacturing and installation of polymer floor systems. Installation shall be directly supervised by a technical representative of the material manufacturer throughout the period of installation.
- 1.6.1.3 Submit test lab reports to verify compliance of flooring systems with specification requirements.

1.6.2 **Design:**

- 1.6.2.1 Not applicable.

1.6.3 **Materials/Finishes:**

- 1.6.3.1 System Description: Proprietary flooring system, general service quality, nominal thickness of 6mm, consisting of:
 - 1.6.3.1.1 Two component, penetrating, moisture tolerant epoxy primer.
 - 1.6.3.1.2 Three component mortar consisting of epoxy resin, curing agent and selected graded aggregates blended with inorganic pigments.
 - 1.6.3.1.3 Two component, 100% solid, general service epoxy coating, formulated to increase abrasion and chemical resistance.
 - 1.6.3.1.4 Medium texture finish for slip resistance.
 - 1.6.3.1.5 Provide integral cove base, 100mm high min.

- 1.6.3.2 Coatings: Solvent free, 2 component thermosetting cold cured, high build interior epoxy coating. semi-gloss finish.
- 1.6.3.3 Primers and substrate fillers per manufacturer's recommendation.
- 1.6.3.4 Acceptable material: *[Stonhard]*
- 1.6.4 **Fabrication/Installation:**
- 1.6.4.1 Coatings:
 - 1.6.4.1.1 Apply primers to 0.75mm thickness over substrate per manufacturer's written recommendations.
 - 1.6.4.1.2 Apply epoxy coatings in two individual, uniform applications. Apply evenly, uniform in colour and appearance, and free from defects detrimental to appearance or performance of coating.
 - 1.6.4.1.3 Minimum dry film thickness to 0.75mm. Verify film thickness of completed coating system in field using Tooke Mark II coating inspection gauge.
- 1.6.4.2 Install epoxy floor systems in accordance with manufacturer's written instructions.

1.7 WATERPROOF COATINGS

- 1.7.1 **General:**
- 1.7.1.1 Warranty: the 12 month warranty period is to be extended to 24 months.
- 1.7.2 **Design:**
- 1.7.2.1 Design coatings to allow for structural movement or deflection of building, and span cracks in substrate surfaces to max. 1.5mm wide which may occur after installation of topping.
- 1.7.3 **Materials/Finishes:**
- 1.7.3.1 Membrane: flexible two component epoxy-urethane, 40mil dry film min. thickness, to following physical properties:
 - 1.7.3.1.1 Hardness: to *[ASTM D2240]*, 65 Shore A.
 - 1.7.3.1.2 Tensile Strength: to *[ASTM D412]*, 4.4 Mpa at 20° C.
 - 1.7.3.1.3 Adhesion: to *[ASTM C957]*, 5.6kN/m.
 - 1.7.3.1.4 Tear resistance: to *[ASTM D624]*, 22.8 kN/m.
 - 1.7.3.1.5 Elongation: to *[ASTM D412]*, 240 at 20° C.
 - 1.7.3.1.6 Solids by volume 89%.

- 1.7.3.2 Wearing Course: flexible two component epoxy-urethane, 10mil dry film min. thickness, to following physical properties:
 - 1.7.3.2.1 Abrasive resistance: to [ASTM D4060], 76Mg loss.
 - 1.7.3.2.2 Elongation: to [ASTM D422], 17%.
 - 1.7.3.2.3 Solids by volume 50%.
 - 1.7.3.2.4 Coating Complete System: [CAN4-S102.2].
 - 1.7.3.2.5 Flame Spread: 66, Smoke Developed: 245, Fuel Contribution: less than 5.
- 1.7.3.3 Joint and crack sealant, aggregates and surface conditioners as per manufacturer's recommendation.
- 1.7.4 **Fabrication/Installation:**
 - 1.7.4.1 Prepare surfaces to receive coatings in accordance with manufacturer's instructions.
 - 1.7.4.2 Install coating membranes in accordance with manufacturer's instructions and to achieve a no-slip finish.
 - 1.7.4.3 Provide flood testing. Plug drains on horizontal surfaces and restrict run-off, flood with water to a depth of 80mm, and allow to stand at least one hour. If leaks occur, repair and retest.

End of Section