

Part 1 General

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C309-03, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-25.20-95, Surface Sealer for Floors.
- .3 CSA International
 - .1 CAN/CSA-A23.1-14/A23.2-14, Concrete Materials and Methods of Concrete Construction / Test Methods And Standard Practices For Concrete

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature and data sheets for concrete finishes and include product characteristics, performance criteria, physical size, finish and limitations.
 - .1 Include application instructions for concrete floor treatments.
- .3 Submit written declaration that components used are compatible and will not adversely affect finished flooring products and their installation adhesives.

1.3 ENVIRONMENTAL REQUIREMENTS

- .1 Temporary lighting:
 - .1 Minimum 1200 W light source, placed 2.5 m above floor surface, for each 40 sq m of floor being treated.
- .2 Electrical power:
 - .1 Provide sufficient electrical power to operate equipment normally used during construction.
- .3 Work area:
 - .1 Make work area water tight protected against rain and detrimental weather conditions.
- .4 Temperature:
 - .1 Maintain ambient temperature of not less than 10 degrees C from 7 days before installation to at least 48 hours after completion of work and maintain relative humidity not higher than 40% during same period.

- .5 Moisture:
 - .1 Ensure concrete substrate is within moisture limits prescribed by flooring manufacturer.
- .6 Safety:
 - .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.
- .7 Ventilation:
 - .1 Provide continuous ventilation during and after coating application.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements:
 - .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.

Part 2 Products

2.1 PERFORMANCE REQUIREMENTS

- .1 Product quality and quality of work in accordance with Section 01 61 00 - Common Product Requirements.

2.2 CURING COMPOUNDS

- .1 Concrete curing compound to be high solids, water based, curing and sealing compound to ASTM C309-03.
 - .1 Concrete curing compound shall be compatible with flooring adhesives.
 - .2 Unless specified elsewhere herein, apply curing compound to manufacturer's written instructions.

2.3 SEALING COMPOUNDS

- .1 Penetrating sealer for interior and exterior concrete to be a clear, water based silane penetrating sealer.
 - .1 Unless specified elsewhere herein, apply to manufacturer's written instructions.

2.4 MIXES

- .1 Mixing ratios in accordance with manufacturer's written instructions.

Part 3 Execution

3.1 FINISHING

- .1 Do concrete floor finishing to CSA A23.1 except where specified otherwise.
- .2 Add or remove concrete during floating to obtain a surface with no more than 3 mm deviation from the required surface in any 3 metre length.
- .3 Ensure formwork and embedded metal parts are not disturbed or displaced during the finishing operation.
- .4 Consolidate concrete by vibrating to force coarse aggregate into concrete mix and then screed.
- .5 Float surface with wood or metal floats or with power finishing machine and bring surface to true grade.
- .6 Steel trowel to smooth and even surface in accordance with CAN/CSA-A23.1-14/A23.2-14 Class A.
- .7 Follow with second steel trowelling to produce smooth burnished surface.
- .8 Sprinkling of dry cement or dry cement and sand mixture over concrete surfaces is not acceptable.
- .9 Apply curing compound to manufacturer's instructions.

3.2 WORKMANSHIP

- .1 Steel trowel concrete slabs to be left exposed or to receive applied floor finishes.
- .2 Concrete slabs to receive ceramic tile, to be screeded off to true lines and levels shown and left ready to receive finish. Depress slabs to accommodate finish.
- .3 Where floor drains occur, floors to be level around walls and have a minimum 10 mm per metre uniform pitch to drains unless indicated otherwise.
- .4 Saw cut control joints in slabs-on-grade within 12 hours after finishing.
 - .1 Use 5 mm thick blade, cutting to 1/3 of slab thickness or as shown on drawings.
 - .2 Control joints to be located as shown on the drawings.
 - .3 Fill joints with sealant. Saw cut crack control joints to CSA A23.1-04.

3.3 CURING

- .1 Steel trowel concrete
- .2 All concrete slabs shall be cured as follows:
 - Method 1
 - .1 If air temperature is between 5°C and 26°C, apply curing compound in strict accordance with manufacturer's instructions at the rate of 7 square meters per litre.

Method 2

- .1 If air temperature is 27°C or above, cure the slab by continuous wet curing for a minimum of 5 days.
- .2 Cover slab with a burlap or non-woven geotextile fabric immediately after finishing of concrete.
- .3 Water shall not be allowed to drip, flow, or puddle on the concrete slab.
- .4 Equipment and materials necessary for water curing shall be on site and ready for use prior to concrete placement.
- .5 Following the 5 days of wet curing and immediately after surface water is removed, apply curing compound in strict accordance with manufacturer's instructions at the rate of 7 square meters per litre.

(Note: Method 2 may be used in place of Method 1)

- .3 After curing and when concrete is dry, seal all slab floor joints at junction with vertical surfaces with joint sealant.

3.4 EXTERIOR CONCRETE SLABS WALKWAYS, STEPS, PADS, ETC.

- .1 All concrete exposed to the exterior to be air entrained.
- .2 Float and trowel concrete walkways as per Clause 3.2
- .3 Final finish exposed concrete surfaces by lightly combing with a medium stiff broom to provide a non-slip finish.
- .4 Tool edges, cross score control joints as indicated or at approximately 1 m o.c. (walkways on grade only).
- .5 Install impregnated fibre expansion joints at approximately 5 m o.c. (walkways only).
- .6 Apply penetrating sealer to the Manufacturer's written instructions at a rate of not less than 4 m²/l.
- .7 Saw cut control joints and apply curing compound in accordance with this specification.
- .8 Clean and fill joints with sealant as specified.
- .9 **All exterior concrete to be cured by continuous wet curing for a minimum of 7 days followed immediately after this with the penetrating sealer as noted above.**

3.5 EXTERIOR CONCRETE VERTICAL SURFACES.

- .1 All exposed concrete above from grade level up to be ground, patched and sac rub for a smooth finish.
- .2 Remove all latencies, bumps, holes, wires, nails etc... which would impede a smooth final finish.
- .3 Verify that slab substrate site conditions surfaces are ready to receive work and elevations are as recommended by manufacturer's written instructions indicated on shop drawings.

3.6 SEALER

- .1 Apply concrete sealer in accordance with manufacturer's written instructions.
- .2 After sealer is dry, seal joints at junction with vertical surfaces with sealant.
- .3 Clean over spray. Clean sealant from adjacent surfaces.

3.7 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.

3.8 PROTECTION

- .1 Protect finished installation in accordance with manufacturer's instructions.

END OF SECTION