This specification outlines the requirements for the materials and finishing procedures for concrete floor finishes.

PART 1 REFERENCES

This specification refers to the following standards, specifications, or publications:

ASTM International (ASTM)

C171	Standard Specification for Sheet Materials for Curing Concrete
C309	Liquid Membrane-Forming Compounds for Curing Concrete

Canadian General Standards Board (CGSB)

CAN/CGSB-25.20	Surface Sealer for Floors

CSA Group

A23.1/A23.2	Concrete Materials and Methods of Concrete Construction/ Test Methods and Standard Practices for Concrete

PART 2 GENERAL

2.1 SUBMITTALS

.1 Submit submittals in accordance with Section 01340 – Shop Drawings, Samples and Submissions.

.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.

.2 Submit WHMIS Safety Data Sheet (SDS) in accordance with Section 01720 – Closeout Submittals.

.3 Include application instructions for concrete floor treatments.

.3 Samples:

.1 Minimum [four (4)] weeks prior to beginning Work, submit [tw0 (2)] samples for review and acceptance of materials proposed for use as follows:

.1 five (5) L of chemical hardeners.

.2 five (5) L of sealing compounds.

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.3 five (5) L of curing compound.
.4 five (5) L of concrete stains.

PART 3 PRODUCTS

3.1 PERFORMANCE REQUIREMENTS

.1 Product quality and quality of work in accordance with Section 01600 – Material and Equipment.

.2 Submit written declaration that components used are compatible and will not adversely affect finished flooring products and their installation adhesives.

3.2 GENERAL

.1 Concrete materials in accordance with Section 03300 – Cast-in-Place Concrete and reinforcement in accordance with Section 03200 – Concrete Reinforcement.

.2 Premixed Metallic or non-metallic floor hardener: as specified in contract documents.

.3 Wax: concrete floor buffing compound.

.4 Colouring agent: metallic type concrete colouring pigments.

3.3 CHEMICAL HARDENER

.1 Sodium silicate, magnesium fluosilicate, or zinc fluosilicate blend as indicated.

.2 Water: potable

3.4 SEALING COMPOUNDS

.1 Surface sealer: to CAN/CGSB-25.20, Type 2 - water based.

.2 Surface sealers may not be manufactured or formulated with aromatic solvents formaldehyde halogenated solvents mercury lead cadmium hexavalent chromium and their compounds.

3.5 CURING COMPOUNDS

.1 Waterborne membrane forming curing membrane to ASTM C 309, specified, Class B.

.1 Verify compatibility with subsequent finishes.

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3.6 CONCRETE STAINS

.1 Select low VOC, water-based concrete stains.

3.7 WET CURE

.1 Clear polyethylene film to ASTM C171, minimum thickness 0.15 mm.

3.8 MIXES

.1 Mixing, ratios and application in accordance with manufacturer's instructions.

PART 4 EXECUTION

4.1 EXAMINATION

.1 Verify that slab surfaces are ready to receive work and elevations are as indicated on drawings by manufacturer.

4.2 PREPARATION OF EXISTING SLAB

.1 Rub exposed sharp edges of concrete with carborundum to produce 3 mm radius edges unless otherwise indicated.

.2 Saw cut control joints to CSA-A23.1/A23.2, 24 hours maximum after placing of concrete.

.3 Use mechanical stripping and/or strong solvent to remove chlorinated rubber or existing surface coatings.

.4 Use protective clothing, eye protection, and respiratory equipment during stripping of chlorinated rubber or existing surface coatings.

4.3 CONCRETE STAINING

.1 Coordinate with Section 03300 – Cast-in-Place Concrete for wet curing. Liquid curing compounds not permitted under staining.

.2 Cure concrete for minimum 60 days.

.3 Clean and prepare concrete in accordance with manufacturers written instructions.

.4 Apply two (2) coats of chemical stain materials in accordance with manufacturers written instructions; obtain Owner's acceptance after application of both first and second coats.

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.5 Apply recommended cure/seal materials in accordance with manufacturer's written instructions, in number of coats to achieve required floor lustre.

4.4 APPLICATION FINISH

.1 Apply concrete finishing floor hardener in accordance with manufacturer's instructions. Cure to manufacturers recommendations.

.2 Finish concrete in accordance with CSA A23.1/A23.2 Class A.

.3 Do not sprinkle dry cement or dry cement and sand mixture over concrete surfaces.

.4 Saw cut crack-control joints in accordance with CSA A23.1/A23.2 a maximum of 24 hours ~~maximum~~ after placing of concrete.

.5 Apply concrete floor treatment in accordance with Sealer manufacturer's instructions.

.6 Cure concrete in accordance with CSA A23.1/A23.2except where specified otherwise.

.7 Clean over spray: Clean sealant form adjacent surfaces.

4.5 TOPPINGS

.1 Place dividers, edge strips, reinforcing mesh, expansion joint assemblies, and other cast-in items as specified.

.2 Apply cement grout to base slab in accordance with CSA A23.1/A23.2.

.3 Apply bonding adhesive to base slab in accordance with manufacturer's instructions.

.4 Apply concrete topping of 30 MPa minimum compressive strength in accordance with CSA A23.1/A23.2.

4.6 PROTECTION

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

PART 5 PAYMENT

5.1 MEASUREMENT FOR PAYMENT

.1 Finishing, sealing, placement of hardeners and coloration are considered incidental to the work specified in Section 03300 – Cast-in-Place Concrete and will not be measured.

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5.2 BASIS OF PAYMENT

.1 All costs associated with the work outlined in this specification shall be deemed to be included in the appropriate unit and lump sum prices quoted as outlined in Measurement for Payment subsection of this specification and as included in the MERX Schedule of Quantities and Prices.

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