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## PART 1 - GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Section 03 20 00 - Concrete Reinforcing.
- .2 Section 03 30 00.01 - Cast-in-Place Concrete Short Form.
- .3 Section 03 35 00 - Concrete Finishing.

### 1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
  - .1 CSA-A23.1-04/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CSA-O86S1-05, Supplement No. 1 to CAN/CSA-O86-01, Engineering Design in Wood.
  - .3 CSA O121-M1978(R2003), Douglas Fir Plywood.
  - .4 CSA O151-04, Canadian Softwood Plywood.
  - .5 CSA O153-M1980(R2003), Poplar Plywood.
  - .6 CAN/CSA-O325.0-92(R2003), Construction Sheathing.
  - .7 CSA O437 Series-93(R2006), Standards for OSB and Waferboard.
  - .8 CSA S269.1-1975(R2003), Falsework for Construction Purposes.
  - .9 CAN/CSA-S269.3-M92(R2003), Concrete Formwork, National Standard of Canada
- .2 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

### 1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
- .3 Indicate method and schedule of construction, shoring, stripping and re-shoring procedures, materials, arrangement of joints, special architectural exposed finishes, ties, liners, and locations of temporary embedded parts. Comply with CSA S269.1, for falsework drawings Comply with CAN/CSA-S269.3 for formwork drawings.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- .1 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 22 - Construction/Demolition Waste Management and Disposal.
  - .2 Place materials defined as hazardous or toxic in designated containers.
  - .3 Divert wood materials from landfill to a recycling reuse composting facility as approved by Departmental Representative.
  - .4 Divert plastic materials from landfill to a recycling reuse composting facility as approved by Departmental Representative.
  - .5 Divert unused form release material from landfill to an official hazardous material collections site as approved by the Departmental Representative.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- .1 Formwork materials:
    - .1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-0121, CAN/CSA-086, and CSA-0153.
    - .2 For concrete with special architectural features, use formwork materials to CSA-A23.1/A23.2.
    - .3 Rigid insulation board: to CAN/ULC-S701.
  - .2 Tubular column forms: round, spirally wound laminated fibre forms.
  - .3 Form ties:
    - .1 For concrete not designated 'Architectural', use removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter in concrete surface.
    - .2 For Architectural concrete, use snap ties complete with plastic cones and light grey concrete plugs.
  - .4 Form release agent: non-toxic, biodegradable, low VOC,.
  - .5 Form stripping agent: colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 70 and 110s Saybolt Universal at 40 degrees C, flashpoint minimum 150 degrees C, open cup.
  - .6 Falsework materials: to CSA-S269.1.
  - .7 Sealant: to Section 07 92 00 - Joint Sealants.
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## PART 3 - EXECUTION

### 3.1 FABRICATION AND ERECTION

- .1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.
- .2 Obtain Departmental Representative's approval for use of earth forms framing openings not indicated on drawings.
- .3 Hand trim sides and bottoms and remove loose earth from earth forms before placing concrete.
- .4 Fabricate and erect falsework in accordance with CSA S269.1.
- .5 Refer to architectural drawings for concrete members requiring architectural exposed finishes.
- .6 Do not place shores and mud sills on frozen ground.
- .7 Provide site drainage to prevent washout of soil supporting mud sills and shores.
- .8 Fabricate and erect formwork in accordance with CAN/CSA-S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA-A23.1/A23.2.
- .9 Align form joints and make watertight.
  - .1 Keep form joints to minimum.
- .10 Locate horizontal form joints for exposed columns 2400 mm above finished floor elevation.
- .11 Use 19 mm chamfer strips on external corners and/or 19 mm fillets at interior corners, joints, unless specified otherwise.
- .12 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.
- .13 Construct forms for architectural concrete, and place ties as indicated and as directed.
  - .1 Joint pattern not necessarily based on using standard size panels or maximum permissible spacing of ties.
- .14 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections.
  - .1 Ensure that anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.

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- .15 Clean formwork in accordance with CSA-A23.1/A23.2, before placing concrete.
- .16 When slip forming and flying forms are used, submit details as indicated in PART 1 - SUBMITTALS.

### 3.2 REMOVAL AND RESHORING

- .1 Leave formwork in place for following minimum periods of time after placing concrete.
  - .1 3 days for walls and sides of beams.
  - .2 7 days for columns.
  - .3 28 days for beam soffits, slabs, decks and other structural members, or 7 days when replaced immediately with adequate shoring to standard specified for falsework.
  - .4 2 days for footings and abutments.
- .2 Remove formwork when concrete has reached 70% of its design strength or minimum period noted above, whichever comes later, and replace immediately with adequate reshoring.
- .3 Provide necessary reshoring of members where early removal of forms may be required or where members may be subjected to additional loads during construction as required.
- .4 Re-use formwork and falsework subject to requirements of CSA-A23.1/A23.2.

## PART 1 - GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Section 03 10 00 - Concrete Forming and Accessories.
- .2 Section 03 30 00.01 - Cast-in-Place Concrete Short Form
- .3 Section 03 35 00 - Concrete Finishing

### 1.2 REFERENCES

- .1 American Concrete Institute (ACI)
  - .1 SP-66-04, ACI Detailing Manual 2004.
- .2 ASTM International
  - .1 ASTM A 82/A 82M-07, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
  - .2 ASTM A 185/A 185M-07, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
- .3 CSA International
  - .1 CSA-A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
  - .2 CAN/CSA-A23.3-04(R2010), Design of Concrete Structures.
  - .3 CSA-G30.18-09, Carbon Steel Bars for Concrete Reinforcement.
  - .4 CSA-G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .5 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .6 CSA W186-M1990(R2007), Welding of Reinforcing Bars in Reinforced Concrete Construction.
- .4 Reinforcing Steel Institute of Canada (RSIC)
  - .1 RSIC-2004, Reinforcing Steel Manual of Standard Practice.

### 1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Prepare reinforcement drawings in accordance with RSIC Manual of Standard Practice and SP-66.
  - .3 Shop Drawings:
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- .1 Submit drawings.
  - .1 Indicate placing of reinforcement and:
    - .1 Bar bending details.
    - .2 Lists.
    - .3 Quantities of reinforcement.
    - .4 Sizes, spacings, locations of reinforcement and mechanical splices if approved by Departmental Representative, with identifying code marks to permit correct placement without reference to structural drawings.
    - .5 Indicate sizes, spacings and locations of chairs, spacers and hangers.
  - .2 Detail lap lengths and bar development lengths to CAN/CSA-A23.3, unless otherwise indicated.
    - .1 Provide type A tension lap splices unless otherwise indicated.
- .4 When Chromate solution is used as replacement for galvanizing non-prestressed reinforcement, provide product description for review by Departmental Representative prior to its use.

#### 1.4 QUALITY ASSURANCE

- .1 Submit in accordance with Section 01 45 00 - Quality Control and as described in PART 2 - SOURCE QUALITY CONTROL.
  - .1 Mill Test Report: upon request, provide Departmental Representative with certified copy of mill test report of reinforcing steel, minimum 4 weeks prior to beginning reinforcing work.
  - .2 Upon request submit in writing to Departmental Representative proposed source of reinforcement material to be supplied.

#### 1.5 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: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
  - .3 Storage and Handling Requirements:
    - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
    - .2 Replace defective or damaged materials with new.
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## PART 2 - PRODUCTS

### 2.1 MATERIALS

- .1 Substitute different size bars only if permitted in writing by Departmental Representative.
- .2 Reinforcing steel: billet steel, grade 400, deformed bars to CSA-G30.18, unless indicated otherwise.
- .3 Reinforcing steel: weldable low alloy steel deformed bars to CSA-G30.18.
- .4 Cold-drawn annealed steel wire ties: to ASTM A 82/A 82M.
- .5 Welded steel wire fabric: to ASTM A 185/A 185M.
  - .1 Provide in flat sheets only.
- .6 Chairs, bolsters, bar supports, spacers: to CSA-A23.1/A23.2.
- .7 Mechanical splices: subject to approval of Departmental Representative.
- .8 Plain round bars: to CSA-G40.20/G40.21.

### 2.2 FABRICATION

- .1 Fabricate reinforcing steel in accordance with CSA-A23.1/A23.2, SP-66 and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Canada.
  - .1 SP-66 unless indicated otherwise.
- .2 Obtain Departmental Representative's written approval for locations of reinforcement splices other than those shown on placing drawings.
- .3 Upon approval of Departmental Representative , weld reinforcement in accordance with CSA W186.
- .4 Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.

### 2.3 SOURCE QUALITY CONTROL

- .1 Upon request, provide Departmental Representative with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 4 weeks prior to beginning reinforcing work.
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- .2 Upon request inform Departmental Representative of proposed source of material to be supplied.

### PART 3 - EXECUTION

#### 3.1 FIELD BENDING

- .1 Do not field bend or field weld reinforcement except where indicated or authorized by Departmental Representative .
- .2 When field bending is authorized, bend without heat, applying slow and steady pressure.
- .3 Replace bars, which develop cracks or splits.

#### 3.2 PLACING REINFORCEMENT

- .1 Place reinforcing steel as indicated on placing drawings and in accordance with CSA-A23.1/A23.2.
- .2 Use plain round bars as slip dowels in concrete.
  - .1 Paint portion of dowel intended to move within hardened concrete with one coat of asphalt paint.
  - .2 When paint is dry, apply thick even film of mineral lubricating grease.
- .3 Prior to placing concrete, obtain Departmental Representative's approval of reinforcing material and placement.
- .4 Ensure cover to reinforcement is maintained during concrete pour.

#### 3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 22 - Construction/Demolition Waste Management and Disposal.

## PART 1 - GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Section 03 10 00 - Concrete Forming and Accessories
- .2 Section 03 20 00 - Concrete Reinforcing
- .3 Section 03 35 00 - Concrete Finishing

### 1.2 REFERENCES

- .1 ASTM International
  - .1 ASTM A 185/A 185M-07, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
  - .2 ASTM D 260-86(2001), Standard Specification for Boiled Linseed Oil.
  - .3 ASTM D 1751-04, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non extruding and Resilient Bituminous Types).
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-19.24-M90, Multicomponent, Chemical-Curing Sealing Compound.
- .3 CSA International
  - .1 CSA-A23.1/A23.2-2004, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CSA A3000-08, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
  - .3 CAN/CSA-G30.18-M92(R2002), Billet-Steel Bars for Concrete Reinforcement.

### 1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Shop Drawings:
    - .1 Submit placing drawings prepared in accordance with plans to clearly show size, shape, location and necessary details of reinforcing.
  - .3 At least 4 weeks prior to beginning Work, inform Departmental Representative of source of fly ash.
    - .1 Do not change source of fly ash without written approval of Departmental Representative .
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- .4 Concrete hauling time: provide for review by Departmental Representative deviations exceeding maximum allowable time of 120 for concrete to be delivered to site of Work and discharged after batching.

#### 1.4 QUALITY ASSURANCE

- .1 Provide to Departmental Representative, 4 weeks minimum prior to starting concrete work, valid and recognized certificate from plant delivering concrete.
  - .1 Quality Control Plan: provide written report to Departmental Representative verifying compliance that concrete in place meets performance requirements.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements:
  - .1 Concrete hauling time: deliver to site of Work and discharged within 120 minutes maximum after batching.
    - .1 Do not modify maximum time limit without receipt of prior written agreement from Departmental Representative and concrete producer as described in CSA A23.1/A23.2.
    - .2 Deviations to be submitted for review by the Departmental Representative.
- .2 Concrete delivery: ensure continuous concrete delivery from plant meets CSA A23.1/A23.2.
- .3 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials in accordance with Section 01 74 22 - Construction/Demolition Waste Management and Disposal.

### PART 2 - PRODUCTS

#### 2.1 DESIGN CRITERIA

- .1 Alternative 1 - Performance: to CSA A23.1/A23.2, and as described in MIXES of PART 2 - PRODUCTS.

#### 2.2 PERFORMANCE CRITERIA

- .1 Quality Control Plan: ensure concrete supplier meets performance criteria of concrete as established by Departmental Representative and provide verification of compliance as described in PART 1 - QUALITY ASSURANCE.
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## 2.3 MATERIALS

- .1 Cement: to CSA A3001, Type GU.
- .2 Blended hydraulic cement: Type GUb to CSA A3001.
- .3 Supplementary cementing materials: with minimum 20% Type F fly ash replacement N GGBFS, by mass of total cementitious materials to CSA A3001.
- .4 Water: to CSA A23.1/A23.2.
- .5 Reinforcing bars: to CAN/CSA-G30.18, Grade 400.
- .6 Welded steel wire fabric: to ASTM A 185.
- .7 Premoulded joint filler:
  - .1 Bituminous impregnated fibreboard: to ASTM D 1751.
- .8 Joint sealer/filler: grey to CAN/CGSB-19.24, Type 1, Class B.
- .9 Sealer: proprietary poly-siloxane resin blend.
- .10 Other concrete materials: to CSA A23.1/A23.2.

## 2.4 MIXES

- .1 Alternative 2 - Prescriptive Method for specifying concrete: owner's concrete mix in accordance with CSA A23.1.
  - .1 Ensure materials used in concrete mix have been submitted for testing and meet requirements of CSA A23.1.
  - .2 Departmental Representative to proportion concrete mix for normal including:
    - .1 Class of exposure: As shown on drawings.
    - .2 Aggregate: normal-density, maximum size 19mm, alkali aggregate reactivity kg/m<sup>3</sup> of concrete.
    - .3 Admixture: air-entraining chemical to ASTM C 494/C 494M corrosion-inhibiting lithium-bases SRA VMA kg/m<sup>3</sup> of concrete.
    - .4 Supplementary cementing materials: with minimum 20% Type F fly ash replacement, by kg/m<sup>3</sup> of total cementitious material.
    - .5 Water: kg/m<sup>3</sup> of concrete.
    - .6 Air content category: As Shown on Drawings.
    - .7 Slump: at time and point of discharge 80mm. Concrete
    - .8 Concrete supplier's certification. Provide quality
    - .9 Provide quality management plan to ensure verification of concrete quality to specified performance.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- .1 Provide Departmental Representative 24 hours notice before each concrete pour.
- .2 Place concrete reinforcing in accordance with Section 03 20 00 - Concrete Reinforcing.
- .3 During concreting operations:
  - .1 Development of cold joints not allowed.
  - .2 Ensure concrete delivery and handling facilitates placing with minimum of rehandling, and without damage to existing structure or Work.
- .4 Protect previous Work from staining.
- .5 Clean and remove stains prior to application of concrete finishes.

### 3.2 INSTALLATION/ APPLICATION

- .1 Do cast-in-place concrete work in accordance with CSA A23.1/A23.2.
- .2 Sleeves and inserts:
  - .1 Cast in sleeves, ties, slots, anchors, reinforcement, frames, conduit, bolts, waterstops, joint fillers and other inserts required to be built-in.
  - .2 Sleeves and openings greater than 100 mm x 100 mm not indicated, must be reviewed by Departmental Representative.

### 3.3 FINISHES

- .1 Formed surfaces exposed to view: sack rubbed finish in accordance with CSA A23.1/A23.2.
  - .2 Interior floor slabs to be left exposed, sheet vinyl, other covering, requiring smooth surface: initial finishing operations followed by final finishing comprising mechanical floating and steel trowelling as specified in CSA A23.1/A23.2 to produce hard, smooth, dense trowelled surface free from blemishes.
  - .3 Floor slabs to receive mortar bed for ceramic or quarry tile: screed to correct grade to provide broomed texture.
  - .4 Equipment pads: provide smooth trowelled surface.
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- .5 Pavements, walks, curbs and exposed site concrete:
  - .1 Screed to plane surfaces and use aluminum, magnesium and wood floats.
  - .2 Provide round edges and joint spacings using standard tools.
  - .3 Trowel smooth to provide lightly brushed non-slip finish.

#### 3.4 CONTROL JOINTS

- .1 Cut control joints in slabs on grade at locations indicated, to CSA A23.1/A23.2 and install specified joint sealer/filler.

#### 3.5 EXPANSION AND ISOLATION JOINTS

- .1 Install premoulded joint filler in expansion and isolation joints full depth of slab flush with finished surface to CSA A23.1/A23.2.

#### 3.6 CURING

- .1 Use curing compounds compatible with applied finish on concrete surfaces free of bonding agents and to CSA A23.1/A23.2.

#### 3.7 SEALING APPLICATION

- .1 After curing is complete, apply poly-siloxane resin blend sealer at 4 m<sup>2</sup> /L.

#### 3.8 SITE TOLERANCES

- .1 Concrete floor slab finishing tolerance to CSA A23.1/A23.2.

#### 3.9 FIELD QUALITY CONTROL

- .1 Concrete testing: to CSA A23.1/A23.2 by testing laboratory designated and paid for by Departmental Representative . Accelerated test methods will apply.

#### 3.10 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
  - .2 Use trigger operated spray nozzles for water hoses.
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- .3 Designate cleaning area for tools to limit water use and runoff.
- .4 Cleaning of concrete equipment to be done in accordance with Section 01 35 43 Environmental Procedures.
- .5 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 22 - Construction/Demolition Waste Management and Disposal.
  - .1 Divert unused concrete materials from landfill to local facility after receipt of written approval from Departmental Representative.
  - .2 Provide appropriate area on job site where concrete trucks and be safely washed.
  - .3 Divert admixtures and additive materials from landfill to approved official hazardous material collections site after receipt of written approval from Departmental Representative.
  - .4 Do not dispose of unused admixtures and additive materials into sewer systems, into lakes, streams, onto ground or in other location where it will pose health or environmental hazard.

## PART 1 - GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Section 03 10 00 - Concrete Forming and Accessories.
- .2 Section 03 20 00 - Concrete Reinforcing.
- .3 Section 03 30 00.01 - Cast-in-Place Concrete Short Form.
- .4 Section 09 00 00 - Room Finish Schedule.

### 1.2 REFERENCES

- .1 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-25.20-95, Surface Sealer for Floors.
- .2 CSA International
  - .1 CAN/CSA-A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction//Methods of Test for Concrete.

### 1.3 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 Provide two copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements 01 35 43 - Environmental Procedures. WHMIS MSDS acceptable to Labour Canada and Health and Welfare Canada for concrete floor treatment materials. Indicate VOC content in g/L.
    - .2 Include application instructions for concrete floor treatments.

### 1.4 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.
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- .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 Ventilate area of work as directed by Departmental Representative by use of approved portable supply and exhaust fans.
  - .2 Provide continuous ventilation during and after coating application.

#### 1.5 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.
  - .3 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials in accordance with Section 01 74 22 - Construction/Demolition Waste Management and Disposal.
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## 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 Submit written declaration that components used are compatible and will not adversely affect finished flooring products and their installation adhesives.

### 2.2 CHEMICAL HARDENERS

- .1 Water: potable.

### 2.3 SEALING COMPOUNDS

- .1 Surface sealer: to CAN/CGSB-25.20, Type 2 - water based, clear
- .2 Sealants: maximum VOC limit 250 g/L.

### 2.4 CURING COMPOUNDS

- .1 Select low VOC, water-based, organic-solvent free curing compounds.

### 2.5 CONCRETE STAINS

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

### 2.6 MIXES

- .1 Mixing ratios in accordance with manufacturer's written instructions.
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### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- .1 Verify that site conditions surfaces are ready to receive work and elevations are as recommended by manufacturer's written instructions.

#### 3.2 PREPARATION OF EXISTING SLAB

- .1 Rub exposed sharp edges of concrete with carborundum to produce 3 mm radiused edges unless otherwise indicated.
- .2 Saw cut control joints to CAN/CSA-A23.1, 24 hours maximum after placing of concrete.
- .3 Use protective clothing, eye protection, respiratory equipment during stripping of chlorinated rubber or existing surface coatings.

#### 3.3 APPLICATION

- .1 Apply concrete finishing floor hardener in accordance with manufacturer's written instructions.
- .2 After floor treatment is dry, seal control joints and joints at junction with vertical surfaces with sealant.
  - .1 Sealants.
- .3 Apply floor treatment in accordance with Sealer manufacturer's written instructions.
- .4 Clean over spray. Clean sealant from adjacent surfaces.

#### 3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
    - .1 Leave Work area clean at end of each day.
  - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
  - .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 22 - Construction/Demolition Waste Management and Disposal.
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### 3.5 PROTECTION

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

### 3.6 SCHEDULE

- .1 Refer to Section 09 00 00 - Room Finish Schedule.