

## **1 General**

### **1.1 RELATED REQUIREMENTS**

- .1 Section 03 30 00 - Cast-in-Place Concrete.

### **1.2 DESCRIPTION OF WORK**

- .1 The work of this section comprises the furnishing of all labor, material and equipment necessary for the following, in accordance with the requirements of this Section and as shown on the Drawings.
  - .1 Finishing of all interior floor slabs, stair treads and landings and in-fill areas.
  - .2 Supply and application of all curing, sealing, hardening compounds.
  - .3 Saw-cutting of all saw-cut control joints.
  - .4 Filling of saw-cut control joints at interior concrete floor slabs.
  - .5 Sandblasting concrete finishes.

### **1.3 REFERENCES**

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

### **1.4 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.

### **1.5 PRODUCT DATA**

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. WHMIS MSDS acceptable to Labour Canada and Health and Welfare Canada for concrete floor treatment materials. Indicate VOC content.
- .3 Include application instructions for concrete floor treatments.

### **1.6 ENVIRONMENTAL REQUIREMENTS**

- .1 Work area:
    - .1 Make the work area water tight protected against rain and detrimental weather conditions.
  - .2 Temperature:
    - .1 Maintain ambient temperature of not less than 10°C from 7 days before installation to at least 48 hours after completion of work and maintain relative humidity not higher than 80% during same period.
  - .3 Moisture:
    - .1 Ensure concrete substrate is within moisture limits prescribed by flooring manufacturer.
  - .4 Safety:
    - .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.
  - .5 Ventilation:
    - .1 Contractor will arrange for ventilation system to be operated during installation of concrete floor treatment materials.
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- .2 Ventilate enclosed spaces in accordance with Section 01 51 00 - Temporary Utilities.
- .3 Provide continuous ventilation during and after coating application.

## 1.7 QUALITY CONTROL

- .1 Pre-Pour Meeting
  - .1 Attend a pre-pour quality control meeting including all relevant sub-trades to review the quality of exposed concrete finishes, hardener/sealer application, saw cuts, prepared sub-base, under floor services, pour sequence and related issues.
  - .2 Prior to pouring concrete, provide a 750mm high x 450mm x 450mm sample complete with chamfered corners for the purpose of establishing finish quality of exposed concrete columns, walls and ceilings.
  - .3 The quality of the finished concrete is to be equal or better than the accepted sample.
  - .4 Where the quality of finished concrete falls short of accepted sample for exposed concrete, the Contractor must pay all associated costs to achieve quality of exposed concrete as provided by approved sample.

## 1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate for disposal waste material generated by this Section.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the Departmental Representative initiating a clean-up and related costs being deducted from progress claims.
- .4 Place materials defined as hazardous or toxic waste in designated containers.
- .5 Ensure emptied containers are sealed and stored safely for disposal.
- .6 Use chemical hardeners that are non-toxic.
- .7 Dispose of surplus chemical and finishing materials in accordance with federal, provincial and municipal regulations.
- .8 Dispose of waste from stripping of floors in a manner that will not have unfavorable effects on the environment.

## 2 Products

### 2.1 CHEMICAL HARDENERS

- .1 Type 1 - Sodium silicate.
- .2 Water: potable.

### 2.2 SEALING COMPOUNDS

- .1 Surface sealer: to CAN/CGSB-25.20, Type 1 - solvent-based, clear.
- .2 Surface sealers may not be manufactured or formulated with aromatic solvents hexavalent chromium and their compounds.

### 2.3 CURING AND SEALING COMPOUNDS

- .1 Curing for plain interior floor slabs: all new interior floors at ground floor level shall be moist cured in accordance with the requirements of CAN/CSA A23.1-00, Par, 21.1.6.1 (a) and/or (b). The use of proprietary curing and sealing compounds not permitted.
  - .1 Moist cure shall not be achieved with flooding which may cause damage to existing adjacent occupied areas.
- .2 The penthouse concrete slab is poured and sealed under a separate contract. Following the installation of the concrete housekeeping pads and following the installation of the mechanical equipment, clean the penthouse slab and reseal.

- .3 Curing and sealing compound for mechanical penthouse floor slab and housekeeping pad: liquid type, water-based acrylic to ASTM C-309.
- .4 Cementitious Saw-Cut Control Joint Filler:
  - .1 One-component, non-shrink, fast-setting and drying, polymer-modified cementitious mortar, compatible with adhesive for resilient sheet flooring.
- .5 Flexible Saw-Cut Control Joint Filler:
  - .1 Two component, non-priming, self-leveling, chemical curing polyurethane sealant.
- .6 Use compatible additives, admixtures, curing compounds and hardeners.
- .7 Do not sprinkle dry cement or dry cement and sand mixture over concrete surfaces.

## **2.4 MIXES**

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

## **3 Execution**

### **3.1 EXAMINATION**

- .1 Verify that slab surfaces are ready to receive work and elevations are as indicated on shop drawings. Refer also to Section 03 10 00 - Concrete Forming and Accessories.

### **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 CSA-A23.1, 24 hours maximum after placing of concrete. Saw cuts not cut straight will be rejected and concrete replaced.
- .3 Use strong solvent to remove chlorinated rubber or existing surface coatings.
- .4 Use protective clothing during stripping of chlorinated rubber or existing surface coatings.

### **3.3 APPLICATION**

- .1 After floor treatment is dry, seal control joints and joints at junction with vertical surfaces with Joint Filler.
- .2 Apply floor treatment in accordance with Sealer manufacturer's written instructions.
- .3 Clean over spray. Clean sealant from adjacent surfaces.
- .4 Co-ordinate curing and sealing compounds with floor finishes.

### **3.4 CONCRETE FINISHES**

- .1 Finish concrete in accordance with CAN3-A23.1.
  - .1 Interior floor slabs: Hard, smooth dense, troweled to flat tolerance classification (5mm in 3m).
  - .2 Finishes:
    - .1 Anticipate that 50% of walls, columns and ceilings will be exposed concrete.
    - .2 Exposed concrete is to be smooth, even, joints are to be rubbed to remove joint edges and free from excess air pockets. All as evaluated against the submitted sample.
- .2 Do not sprinkle dry cement or dry cement and sand mixture over concrete surfaces.
- .3 Saw cut crack control joints to CAN3-A23.1, to match existing locations and to layouts indicated on drawings.

### **3.5 APPLICATION OF CURING AND SEALING COMPOUNDS**

- .1 Apply in strict accordance with manufacturer's instructions and at rate recommended by
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manufacturer to meet moisture-retention requirements of ASTM C309.

- .2 Apply to concrete floor slab using appropriate type as specified under PART 2 of this section. Use ONLY curing and sealing compound by same manufacturer as manufacturer of hardener, and recommended by manufacturer as compatible with hardener.
  - .1 Where applicable apply curing and sealing compound following application of hardener at time recommended by manufacturer.
  - .2 Coordinate with finish schedule for applied flooring.

### **3.6 PROTECTION**

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

### **3.7 FILLING OF SAW-CUT CONTROL JOINTS**

- .1 Clean and prepare saw-cut control joints at interior floor slabs to joint filler manufacturer's requirements.
- .2 Install self-leveling sealant at the bottom of all saw-cut control joints in the concrete floor slabs.
- .3 Install cementitious joint filler over flexible sealant in all joints. Strike filler flush with surface of concrete slab and leave ready for installation of floor finish.

### **3.8 APPLICATION OF EXTERIOR SEALING COMPOUNDS**

- .1 After concrete has cured for thirty (30) days apply sealing compound to all exterior concrete walks, in accordance with manufacturer's recommendations.

**END OF SECTION**

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