# 1 GENERAL

## 1.01 RELATED REQUIREMENTS

## 1.02 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.

## 1.03 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.
- .2 Submit drawings showing formwork and falsework design to: CSA A23.1/A23.2.
- .3 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Canada.

## 1.04 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 PRODUCTS

### 2.01 DESIGN CRITERIA

.1 Not used

### 2.02 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.

### 2.03 MATERIALS

.1 Cement: to CSA A3001, Type GU HS.

.2 Water: to CSA A23.1/A23.2.

.3 Reinforcing bars: to CAN/CSA-G30.18, Grade 400.

.4 Welded steel wire fabric: to ASTM A 185.

.5 Joint sealer/filler: grey to CAN/CGSB-19.24, Type 1, Class B.

.6 Other concrete materials: to CSA A23.1/A23.2.

### 2.04 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:

.2 Prepare the normal density concrete in compliance with article 14 of standard A23.1 so as to obtain the following mix for concrete used in the construction of the clean slab for the type of concrete required in the drawings:

.1 Use cement type described in standard CAN/CSA-A 3000.

.2 Minimum compression resistance, confirmed by testing, of 30 MPa at 28 days.

.3 Exposition class: N.

.3 Provide a document attesting that the chosen dosage allows for the production of concrete at the prescribed quality and having the expected resistance in compliance with standard A23.1, clause 17.5.

## 3 EXECUTION

### 3.01 PREPARATION

.1 Provide Departmental Representative 24 hours notice before each concrete pour.

.2 Place 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.

### 3.02 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.

### 3.03 FINISHES

.1 Formed surfaces exposed to view: in accordance with CSA A23.1/A23.2.

.2 Pavements, walks, curbs and exposed site concrete:
- .1 Screed to plane surfaces and use floats.
- .2 Provide round edges and joint spacings using standard tools.
- .3 Trowel smooth to provide lightly brushed non-slip finish.

### 3.04 CURING

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

### 3.07 SEALING APPLICATION

.1 After curing is complete, apply two even coats of linseed oil mixture to clean dry surfaces, each at 8 $m^2$ /L. Allow first coat to dry before applying second coat apply poly-siloxane resin blend sealer at 4 $m^2$ /L.

### 3.08 SITE TOLERANCES

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

## 3.09 FIELD QUALITY CONTROL

.1 Concrete testing: to CSA A23.1/A23.2 by testing laboratory designated and paid for by Departmental Representative.

## 3.10 CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.2 Use trigger operated spray nozzles for water hoses.

.3 Designate cleaning area for tools to limit water use and runoff.

**END OF SECTION**