

PART 1 - GENERAL

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM A 185/A 185M-07, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
 - .2 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.
 - .2 CSA International
 - .3 CSA-A23.1/A23.2-2004, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .4 CSA A3000-[08], Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
 - .5 CAN/CSA-G30.18-M92(R2002), Billet-Steel Bars for Concrete Reinforcement.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01330 - 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 Nova Scotia.
- .3 Prior to beginning Work, submit to Consultant samples of following materials proposed for use: curing compound, joint filler, waterstops.
- .4 Concrete hauling time: provide for review by Consultant deviations exceeding maximum allowable time of 120 for concrete to be delivered to site of Work and discharged after batching.

1.3 QUALITY ASSURANCE

- .1 Provide to Consultant, valid and recognized certificate from plant delivering concrete.
 - .1 Quality Control Plan: provide written report to Consultant

verifying compliance that concrete in place meets performance requirements.

1.4 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 Consultant and concrete producer as described in CSA A23.1/A23.2.
 - .2 Deviations to be submitted for review by the Consultant.
 - .2 Concrete delivery: ensure continuous concrete delivery from plant meets CSA A23.1/A23.2.

PART 2 - PRODUCTS

2.7 DESIGN CRITERIA

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

2.8 PERFORMANCE
CRITERIA

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

2.9 MATERIALS

- .1 Cement: to CSA A3001.
- .2 Blended hydraulic cement: To CSA A3001.
- .3 Supplementary cementing materials: 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.
- .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: boiled linseed oil mixed with mineral spirits 1:1 or poly-siloxane resin blend.

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

2.10 MIXES

- .1 Performance Method for specifying concrete: to meet CSA A23.1/A23.2.
 - .1 Ensure concrete supplier meets performance criteria as established below and provide verification of compliance as described in PART 3 - VERIFICATION.
 - .2 Provide concrete mix to meet required state requirements.
 - .3 Provide concrete mix to meet required hard state requirements.
 - .4 Concrete supplier's certification.
 - .5 Provide quality management plan to ensure verification of concrete quality to specified performance.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Provide Departmental Representative 48 hours notice before each concrete pour.
- .2 Place concrete reinforcing in accordance with drawings.
- .3 During concreting operations:
 - .1 Development of cold joints not allowed.
 - .2 Ensure concrete delivery and handling facilitates placing with minimum of re-handling, 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 Consultant.

3.3 FINISHES

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

- .2 Interior floor slabs to be left exposed, to receive, carpet, sheet vinyl or other covering requiring smooth surface: initial finishing operations followed by final finishing comprising mechanical floating and steel troweling as specified in CSA A23.1/A23.2 to produce hard, smooth, dense troweled surface free from blemishes.
- .3 Floor slabs to receive mortar bed for ceramic tile: screed to correct grade to provide broomed texture.
- .4 Equipment pads: provide smooth troweled surface.
- .5 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.
- .6 Existing concrete slab, to be prepared for new tile floor upon removal of existing. All mortar and residue to be removed, any damage to existing slab to be repaired. Floor to grout cleaned finish and to meet approval of tile installer and department representatives
- .7 Glass fiber reinforced concrete sink, moulded, hybrid mix, no polymers, no acrylics, nucrete extreme series or equal.

3.4 CONTROL JOINTS

- .1 Cut and Form 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 pre-moulded 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 two even coats of linseed oil mixture to clean dry surfaces, each at 8 m² /L. Allow first coat to dry before applying second coat or apply poly-siloxane resin blend sealer at 4 m² /L.

3.8 SITE TOLERANCES

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

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- 3.9 CLEANING .1 Clean in accordance with Section 01740 - Cleaning.
- .2 Use trigger operated spray nozzles for water hoses.
- .3 Designate cleaning area for tools to limit water use and runoff.
- .4 Cleaning of concrete equipment to be done in accordance with Section 01561 - Environmental Procedures.
- .5 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01355 - Construction/Demolition Waste Management and Disposal.