

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 32 16 15 - Concrete Walks, Curbs and Gutters.
- .2 Section 33 65 73 - Concrete Encased Duct Banks and Manholes

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C 260-00, Specification for Air-Entraining Admixtures for Concrete.
 - .2 ASTM C494/C494M-99ae1, Specification for Chemical Admixtures for Concrete.
 - .3 ASTM D1751-04, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non extruding and Resilient Bituminous Types).
- .2 Canadian Standards Association (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 CAN/CSA-A3000-03, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
 - .1 CSA-A3001-03, Cementitious Materials for Use in Concrete.

1.3 SAMPLES

- .1 At least 1 week prior to commencing work, inform Departmental Representative of proposed concrete supplier.

1.4 CERTIFICATES

- .1 Provide certification that mix proportions selected will produce concrete of quality, yield and strength as specified in concrete mixes, and will comply with CSA-A23.1.

1.5 QUALITY ASSURANCE

- .1 Minimum 1 week prior to starting concrete work, submit proposed quality control procedures for Departmental Representative's approval for following items:
 - .1 Hot weather concrete.
 - .2 Cold weather concrete.
 - .3 Curing.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Use trigger operated spray nozzles for water hoses.
- .2 Designate a cleaning area for tools to limit water use and runoff.
- .3 Carefully coordinate the specified concrete work with weather conditions.
- .4 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .5 Prevent plasticizers, water-reducing agents and air-entraining agents from entering drinking water supplies or streams. Using appropriate safety precautions, collect liquid or solidify liquid with an inert, non-combustible material and remove for disposal. Dispose of all waste in accordance with applicable local, provincial and national regulations.
- .6 Choose least harmful, appropriate cleaning method which will perform adequately.

Part 2 Products

2.1 MATERIALS

- .1 Portland cement: to CSA-A3000.
- .2 Supplementary cementing materials: to CSA-A3000.
- .3 Water: to CSA-A23.1.
- .4 Aggregates: to CSA-A23.1. Coarse aggregates to be normal density.
- .5 Air entraining admixture: to ASTM C 260.
- .6 Chemical admixtures: to ASTM C 494. Departmental Representative to approve accelerating or set retarding admixtures during cold and hot weather placing.

- .7 Reinforcing Steel to: CSA-G30.18-09 (R2014), Carbon Steel Bars for Concrete Reinforcement.
- .8 Premoulded joint fillers:
 - .1 Bituminous impregnated fiber board: to ASTM D 1751.

2.2 MIXES

- .1 Concrete:
 - .1 Method: Alternative 1 of CSA Standard.
 - .2 Cement Type: as specified under 2.1.
 - .3 Minimum 28 day compressive strengths and exposure classifications:
 - .1 Curbs, gutters, and duct bank encasement concrete: 32 MPa: C-2.
 - .2 Maintenance Hole Benching: 25 MPa.
 - .4 Nominal size of coarse aggregate in accordance with CSA-A23.1.
 - .5 Slump as specified in CSA-A23.1.
 - .6 Air content as specified in CSA-A23.1.
 - .7 Admixtures: to CSA-A23.1 and subject to approval of Departmental Representative.
- .2 Grout: Mixture of one part Portland cement and two parts clean washed sand, with only sufficient water added to allow placing.

Part 3 Execution

3.1 PREPARATION

- .1 Obtain Departmental Representative's approval before placing concrete. Provide 24 hours notice prior to placing of concrete.
- .2 Pumping of concrete will not be permitted.
- .3 Ensure inserts are not disturbed during concrete placement.
- .4 Prior to placing of concrete obtain Departmental Representative's approval of proposed method for protection of concrete during placing and curing in adverse weather.

3.2 CONSTRUCTION

- .1 Obtain Departmental Representative's approval prior to placing concrete.
- .2 Perform cast-in-place concrete work in accordance with CSA-A23.1/A23.2.

- .3 Install premoulded joint fillers, refer to Section 32 16 15 – Concrete walks, Curbs and Gutters.
- .4 Install reinforcing steel, refer to Section 33 65 73 Concrete Encased Duct Banks and Manholes.

3.3

FIELD QUALITY CONTROL

- .1 Inspection and testing of concrete and concrete materials will be carried out by a Testing Laboratory designated by Departmental Representative in accordance with CSA-A23.2 and Section 01 00 10 - General Instructions.
- .2 Inspection or testing by Departmental Representative will not augment or replace Contractor quality control nor relieve him of his contractual responsibility

END OF SECTION