

**Part 1 General****1.1 REFERENCES**

- .1 American Society for Testing and Materials (ASTM).
  - .1 ASTM C260 / C260M - 10a(2016). Standard Specification for Air-Entraining Admixtures for Concrete.
  - .2 ASTM C494 / C494M - 13. Standard Specification for Chemical Admixtures for Concrete.
- .2 Canadian Standards Association (CSA).
  - .1 CSA A23.1/CSA A23.2 – 14. Concrete Materials and Methods of Concrete Construction / Test Methods and Standard Practices for Concrete.
  - .2 CSA A3000-13. Cementitious Materials Compendium.
- .3 National Building Code of Canada, 2020.

**Part 2 Products****2.1 MATERIALS**

- .1 Portland cement: to CAN/CSA-A3000, Type GU (Type 10).
- .2 Slag cement: cementitious hydraulic slag, to CSA-A363.
- .3 Water, fine aggregates, normal density coarse aggregates: to CSA-A23.1.
- .4 Air entraining admixture: to ASTM C260.
- .5 Chemical admixtures: to ASTM C494.

**2.2 CONCRETE MIXES**

- .1 Proportion normal density concrete to CSA-A23.1, Clause 4.3, to provide exposure classes indicated on drawings. Provide class C-1 concrete unless noted otherwise.
- .2 Obtain specified slump with aid of specified water reducing agent.
- .3 Provide certification that plant, equipment, and all materials to be used in concrete comply with requirements of CSA-A23.1.
- .4 Provide certification that mix proportions selected will produce concrete of specified quality and yield and that strength will comply with CSA-A23.1, Clause 4.4.5.
- .5 Slag cement in combination with normal Portland cement to a maximum of 25% may be used, except in suspended slabs, upon approval of Departmental Representative.
- .6 Obtain Departmental Representative's consent before using chemical admixtures.

**Part 3 Execution****3.1 WORKMANSHIP**

- .1 Do cast-in-place concrete work in accordance with CSA-A23.1, and testing in accordance with CSA-A23.2, except where specified otherwise.
- .2 Conform to National Building Code.
- .3 Obtain Departmental Representative's review of reinforcing placement before placing concrete. Provide 48 hours notice prior to placing of concrete.
- .4 Ensure that reinforcement and inserts are not disturbed during concrete placement.
- .5 Prior to placing of concrete in adverse weather, obtain Departmental Representative's review of proposed method for protection during placing and curing.
- .6 Maintain accurate records of poured concrete items to indicate date, location of pour quality, air temperature and test samples taken.

**3.2 INSERTS**

- .1 Do not eliminate or displace reinforcement to accommodate hardware. If inserts cannot be located as specified, obtain agreement for all modifications from Departmental Representative before placing of concrete.

**3.3 FINISHING**

- .1 Finish concrete to CSA-A23.1.
- .2 Refer to architectural drawings.

**3.4 CURING**

- .1 Cure and protect concrete in accordance with CSA-A23.1. Do not use curing compounds where bond is required by subsequent topping or coating.

**3.5 DEFECTIVE CONCRETE**

- .1 Remove defective concrete, blemishes and embedded debris and repair as directed by Departmental Representative.

**3.6 INSPECTION AND TESTING**

- .1 Inspection and testing of concrete and concrete materials will be carried out by testing laboratory designated by Departmental Representative, in accordance with CSA-A23.1, Clause 4.4.
- .2 Costs of tests will be paid as per 01 45 00 - Quality Control.
- .3 Ship prepaid 3 test cylinders from each 20 cubic meters (max.) of concrete placed to designated testing laboratory.

- .4 Prepare one additional test cylinder during cold weather concreting. Cure cylinder on job site under same conditions as concrete it represents.

**END OF SECTION**

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