
Part 1 GENERAL

1.1 Related Work

- .1 Refer to other Specification Sections for related information.
- .2 Refer to Section 01 33 00 for Shop Drawing/ Submissions requirements.
- .3 Section 03 10 00 – Concrete Forming and Falsework
- .4 Section 03 20 00 – Concrete Reinforcing.
- .5 Section 03 30 00 – Cast-in-Place Concrete.

1.2 Reference Standards

- .1 Do structural concrete work in accordance with CSA A23.1-14, Concrete Materials and Methods of Concrete Construction, except where more stringent standards specify otherwise.
- .2 Do testing for concrete in accordance with CSA standard A23.2-14, Methods of Test for Concrete, except where stricter standards specify otherwise.
- .3 CSA A3000-18, Cementitious Materials Compendium.
- .4 CSA A23.4-16 (R2021), Precast Concrete – Material and Construction.
- .5 ASTM C260/C260M-10a (2016), Standard Specification for Air-Entraining Admixtures for Concrete.
- .6 ASTM C494/C494M-19, Standard Specification for Chemical Admixtures for Concrete.

1.3 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01 33 00 – Submissions/Shop Drawings and in accordance with CSA standards A23.2 and A23.4.
- .2 Include the following items:
 - .1 Design calculations for items designed by manufacturer.
 - .2 Details of reinforcement and their connections.
 - .3 Methods of handling and erection.
 - .4 Openings, sleeve, inserts and related reinforcement.
 - .5 Storage facility.

Part 2 PRODUCTS

2.1 Materials

- .1 Refer to Section 03 30 00 – Cast-in-Place Concrete.
 - .2 Refer to Section 03 20 00 – Concrete Reinforcing.
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2.2 Concrete Mixes

- .1 Proportion structural normal density concrete in accordance with CSA standard A23.1, Alternative 1 to give the following properties for concrete.
- .2 Precast Panels:
 - .1 Cement: Type 20, Moderate Portland Cement.
 - .2 Minimum compressive strength at 28 days: 35 MPa.
 - .3 Class of exposure: C-1.
 - .4 Nominal size of coarse aggregate: 20 mm.
 - .5 Slump at point and time of discharge: 50 mm to 100 mm.
 - .6 Air Content: 5 – 8%.
 - .7 Density of air-drying concrete will be in range of 2240 to 2400 kg/m³.
 - .8 Minimum cement content: 385 kg/m³.
 - .9 Maximum water/cement ratio: 0.4.

Part 3 EXECUTION

3.1 Erection

- .1 Casting shall be done in rigidly constructed forms designed to produce dimensionally correct members with uniform surfaces.
- .2 At time of casting, manufacturer shall incorporate all accessories, reinforcing steel and handling devices required for proper installation and handling of units.
- .3 Provide finished units, which are straight, and square. Make flat surfaces into a true plane.
- .4 Precast units shall be cured to the required 28-day strength prior to shipment.

3.2 Precast Stair Installation

- .1 Do precast concrete work in accordance with CSA standard A23.4.
- .2 Erect precast elements within 10 mm as shown on drawings.
- .3 Replace or repair damaged precast elements to satisfaction of *Departmental Representative* at no additional cost.

3.3 Precast Panel Erection

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3.4 Cleaning

- .1 After erection, clean precast elements to satisfaction of *Departmental Representative*.

END OF SECTION