

PART 1 - GENERAL

- 1.1 REFERENCES .1 Canadian Standards Association (CSA International)
- .1 CSA-A23.1-14/A23.2-14, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CAN/CSA-O86-14, Engineering Design in Wood.
  - .3 CSA O121-17, Douglas Fir Plywood.
  - .4 CSA O151-17, Canadian Softwood Plywood.
  - .5 CSA O153-13, Poplar Plywood.
  - .6 CAN/CSA-O325-16, Construction Sheathing, Second Edition.
  - .7 CSA S269.1-16, Falsework and Formwork, Second Edition.
- .2 Underwriters' Laboratories of Canada (ULC)
- .1 CAN/ULC-S701.1:2017, Standard for Thermal Insulation, Polystyrene Boards, Fifth Edition.
- 1.2 ACTION AND INFORMATIONAL SUBMITTALS .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit shop drawings for formwork and falsework.
- .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Newfoundland and Labrador, Canada.
- .3 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
- .4 Indicate method and schedule of construction, shoring, stripping and re-shoring procedures, materials, arrangement of joints, special architectural exposed finishes, ties, liners, and locations of temporary embedded parts. Comply with CSA S269.1, for formwork and falsework drawings.
-



- 2.1 MATERIALS  
(Cont'd)
- .3 Formwork materials: (Cont'd)
    - .3 Rigid insulation board: to CAN/ULC-S701.1.
  - .4 Tubular column forms: round, steel, internally treated with release material.
  - .5 Form ties:
    - .1 For concrete not designated 'Architectural', use removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter in concrete surface.
    - .2 For Architectural concrete, use snap ties complete with plastic cones and light grey concrete plugs.
  - .6 Form release agent: non-toxic, biodegradable, low VOC.
  - .7 Form stripping agent: colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 15 to 24 mm<sup>2</sup>/s at 40 degrees C, flashpoint minimum 150 degrees C, open cup.
  - .8 Falsework materials: to CSA-S269.1.
  - .9 Sealant: to Section 07 92 00 - Joint Sealants.

PART 3 - EXECUTION

- 3.1 FABRICATION AND  
ERECTION
- .1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.
  - .2 Obtain Departmental Representative's approval for use of earth forms framing openings not indicated on drawings.
  - .3 Hand trim sides and bottoms and remove loose earth from earth forms before placing concrete.
  - .4 Fabricate and erect falsework in accordance with CSA S269.1.



3.2 REMOVAL AND  
RESHORING  
(Cont'd)

- .2 Remove formwork when concrete has reached 70 % of its design strength or minimum period noted above, whichever comes later, and replace immediately with adequate reshoring.
- .3 Provide necessary reshoring of members where early removal of forms may be required or where members may be subjected to additional loads during construction as required.
- .4 Space reshoring in each principal direction at not more than 3000 mm apart.
- .5 Re-use formwork and falsework subject to requirements of CSA-A23.1/A23.2.