

PART 1 GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CAN/CSA-A23.1-04, Concrete Materials and Methods of Concrete Construction.
 - .2 CSA O121-M1978 (R2003), Douglas Fir Plywood.
 - .3 CAN/CSA-S269.3-M92 (R2003), Concrete Formwork.
- .2 Council of Forest Industries of British Columbia (COFI)
 - .1 COFI Exterior Plywood for Concrete Formwork.

1.2 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .4 Use sealers, form release and stripping agents that are non-toxic, biodegradable and have zero or low VOC's.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Formwork materials:
 - .1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-O121 CAN/CSA-O86.1.
 - .2 For concrete with special architectural features, use formwork materials to CAN/CSA-A23.1.
- .2 Form ties:
 - .1 Use removable or snap off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm dia. in concrete surface.
- .3 Form release agent: non-toxic.
- .4 Form stripping agent: colourless mineral oil, non-toxic, free of kerosene, with viscosity between 70 and 110s Saybolt Universal at 40°C, flashpoint minimum 150°C, open cup.
- .5 Falsework materials: to CSA-S269.1.

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 and COFI Exterior Plywood for Concrete Formwork.
- .5 Do not place shores and mud sills on frozen ground.
- .6 Provide site drainage to prevent washout of soil supporting mud sills and shores.
- .7 Fabricate and erect formwork in accordance with CAN/CSA-S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CAN/CSA-A23.1.
- .8 Align form joints and make watertight. Keep form joints to minimum.
- .9 Locate horizontal form joints for exposed columns 2400 mm above finished floor elevation.
- .10 Use 25 mm chamfer strips on external corners and/or 25 mm fillets at interior corners, joints, unless specified otherwise.
- .11 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.
- .12 Construct forms for concrete, and place ties as indicated and/or as directed. Joint pattern not necessarily based on using standard size panels or maximum permissible spacing of ties.
- .13 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections. Assure that all anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.
- .14 Clean formwork in accordance with CAN/CSA-A23.1, before placing concrete.

3.2 REMOVAL AND RESHORING

- .1 Leave formwork in place for following minimum periods of time after placing concrete.
 - .1 Two (2) days for walls and sides of beams.
 - .2 Two (2) days for columns.
 - .3 Twenty-one (21) days for beam soffits, slabs, and other structural members, or 7 days when replaced immediately with adequate shoring to standard specified for falsework.
 - .4 One (1) day for footings.

- .2 Remove shoring when concrete has reached 80 % of its design strength or minimum period noted above, whichever comes later, and replace immediately with adequate reshoring.
- .3 Provide all 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 CAN/CSA-A23.1.

END OF SECTION