

1.0 GENERAL

1.1 Requirements

- .1 Cooperate and coordinate with the requirements of other units of work specified in other sections.

1.2 Work Included

- .1 This section specifies requirements for supply installation and removal of concrete formwork for structures.
- .2 Cooperate and coordinate with the requirements of other units of work specified in other sections.

1.3 Reference Standards

- .1 Do concrete formwork to CSA A23.1, except as otherwise specified herein.

1.4 Responsibility

- .1 The design of formwork and its supporting framing shall be the responsibility of the Contractor.

2.0 PRODUCTS

2.1 Materials

- .1 Formwork Materials: to CSA A23.1.
- .2 Form Ties: snap-off metal ties, free of devices that will leave hole larger than 25 mm diameter, in concrete surface.
- .3 Form Release Agent: colourless mineral oil, free of kerosene or other incompatible material or fluids, compatible with applied finish.

3.0 EXECUTION

3.1 Workmanship

- .1 Verify lines, levels and column centres before proceeding with formwork. Ensure that dimensions agree with drawings.
- .2 Obtain Engineer's permission before framing openings in Structural joists, beams or columns.
- .3 Obtain Engineer's approval of use of earth forms, hand trim sides and bottoms of earth forms and remove loose dirt prior to placing of concrete.

- .4 Align form joints and make watertight without affecting appearance of concrete. Keep form joints to minimum.
- .5 Use 20 mm chamfer strips on external corners of beams, joists, columns, curbs, machine bases.
- .6 Form chases, slots, openings, drops and recesses as detailed or required.
- .7 Set screed with top edge level to proper elevation.

3.2 Tolerance and Measurement

- .1 Construct formwork to maintain the following tolerances:
 - .1 Deviation from vertical line - 5 mm in 3,000 mm, 10 mm in 6,000 mm and 20 mm in 12,000 mm or more.
 - .2 Deviation from flat surface, for walls and floors 5 mm in 3,000 mm.
 - .3 Deviation from horizontal line - 5 mm in 3,000 mm, 20 mm in 12,000 m or more.
 - .4 Deviation of linear building lines from design drawings and position of columns, walls and partitions 6 mm.
 - .5 Deviation in cross-sectional dimensions of columns beams, or in thickness of slabs and walls - plus or minus 6 mm.
- .2 Camber slabs and beams 6 mm per 3000 mm of span unless shown otherwise. Maintain beam depth and slab thickness from cambered surface.

3.3 Inserts

- .1 Set sleeves, ties, anchor bolts, pipe hangers and other inserts, in concrete work as required by other trades.
- .2 No sleeves, ducts, pipes or other openings shall pass through joists, beams, or columns, except where detailed on the drawings.
- .3 Confirm location of all sleeves and openings, shown on structural drawings and check against architectural, mechanical and electrical drawings.
- .4 Install continuous preformed flashing reglets to form where flashings occur at concrete surfaces.
- .5 Install formed construction joints to floor pattern pouring sequence, set vertical, top screed to required elevations, sufficiently secure to resist movement of wet concrete. Drive stake cleanly through vapour barrier.

3.4 Form Removal

- .1 Leave formwork in place for the following minimum periods of time after pouring concrete:
 - .1 Two days for walls and sides of beams.
 - .2 Seven days for columns.
 - .3 Fourteen days for beams soffits, slabs and other structural members, or after in-situ concrete has achieved the specified 28 day strength. Responsibility for ascertaining in-situ concrete strength lies with the Contractor.

END OF SECTION