

How to prepare for a concrete floor placement



www.concretefloors.ca



Safety

- No job has priority over safety, at any time.
- Guardrails must be installed on all suspended slabs.
- Exhaust fumes from heaters and other equipment must be vented to prevent accumulation of both CO and CO₂ gases.
- Ladders shall be of sufficient strength and be secured against movement (stairs are preferable at all times).
- Hospital directions need to be posted.



General

- Drinking water shall be made available at all times.
- Clean toilet facilities shall be provided for both day and evening shifts.
- Parking for late shift cement finishers should be provided adjacent to the work area for safety purposes.
- Emergency phone numbers shall be exchanged.



Hours of Work

- Concrete pours often require more than 24 hours to complete fully (cold weather conditions may add 12 hours or more).
- The normal start time is 7 am.
- The final load of concrete to be delivered to site no later than 8 hours after the commencement of the pour.
- Weekend work is double time per union agreements.



Scheduling

- Schedule as far in advance as is practical.
- Ensure that the work of other trades is complete prior to ordering a pour.
- Bad weather adversely affects all schedules.
- Cancel pours no later than 2 pm on the day preceding the pour.
- The same day cancellation of pours creates show up time labour costs.



Weather

- Weather forecasts from Environment Canada are available at 416-661-0123.
- Weather forecasts are also available on-line at: www.concretefloors.ca/wx.htm



Building Enclosure

- Do not commence a concrete pour in adverse weather conditions.
- A finished roof is mandatory to avoid problems with water damage.
- Cover roof openings.
- Erect walls and seal openings to avoid problems related to rain, snow and wind.
- Ensure that all heaters are vented to remove carbon monoxide and carbon dioxide from the work area.



Permits

- **Permits are the responsibility of the general contractor.**
- **Obtain variances from municipalities which have noise by-laws (where applicable). Adjacent residential occupation needs careful consideration.**
- **Site access and traffic management outside of the work area is the responsibility of the general contractor.**



Security

- **Sufficient security of materials and equipment shall be maintained by the general contractor.**



Water Supply

- Sufficient water must be provided for wet curing operations.
- Water must be of a potable supply in order to avoid staining the floor.
- Water should be 20°C if possible.



Embedded Items

- **Do not cast conduits directly into a concrete floor (they cause cracks).**
- **Ensure that all underground work is complete prior to ordering a concrete placement.**



Benchmarks

- **Ensure that an accurate benchmark is given to the concrete contractor.**
- **A single benchmark should be established for all trades.**



Lighting

- The use of permanent lighting is ideal.
- Lighting must be provided to allow safe access to work areas (eg: stairwells, building exits etc).
- A minimum of 2 tower lights is required for any pour (not eye level lights).
- 1 additional tower light is required for each 10,000 sf of floor area over 10,000 sf (or as required to maintain lighting throughout the work area).
- Ensure sufficient fuel to maintain lights throughout the night.



Pre-construction Meetings

- Solve problems before they are built !
- Must be held at least 3 weeks prior to the pouring of floors.
- Fully review the intent of the project plans and specifications amongst all parties.
- Submittal of joint layout by concrete finishing contractor.
- Submittal of materials by concrete finishing contractor.
- Resolve any conflicts in the construction documents prior to pouring.



Granular Bases

- Shall be level to +/- 10mm (CSA A23.1).
- Shall be uniformly compacted without soft spots.
- Granular bases must not be frozen.
- Remove any standing water.
- The elevation of the granular base is to be maintained during concreting operations by others.



Pumps & Cranes

- Ensure that care is taken to avoid contact with electrical services.
- Provide a level, stable granular base for equipment access and outriggers.
- Ensure that concrete mixes are proportioned for pumping (when applicable).
- Flagmen shall be provided as necessary by the purchaser of the concrete.



Hot Weather Pours

- Do not pour when the temperature is forecasted to be greater than 35°C.
- Ensure that workers are protected from heat stress.
- Use water to cool off surfaces that will be cast against the concrete.
- Consider the use of windbreaks and plastic protection procedures such as fog spraying.



Cold Weather Pours

- Ambient temperatures shall be a min. 10°C during placing and curing periods per CSA.
- Concrete strength gains are significantly impeded under 5°C.
- All surfaces need to be protected from freezing for 7 days to develop strength.
- Do not pour on frozen ground.
- Use non-chloride concrete accelerators to produce a concrete set (when required).



Environmental Damage

- Do not pour an exposed finished floor without the protection from a roof and walls.
- The responsibility to provide suitable protection against damage from the environment rests with the general contractor (rain, wind & snow).



Concrete Mixes

- Review of concrete mix design (minimum 265 kg cement content for exposed concrete).
- Supplementary cementing materials limited to a maximum of 25% slag OR 15% flyash.
- A 5" slump is required per ACI 302.
- Use plasticizers to provide adequate workability (not water).



Concrete Winter Heat Costs

- Concrete winter heat costs start on November 1 through April 15th.
- Accelerated pour schedules to avoid these costs are not always possible.
- The costs of winter heating are the responsibility of the purchaser.



Concrete Delivery

- Review traffic flow for safe concrete delivery.
- Minimize the number of trucks in a building to reduce fume build-up.
- Water addition by the concrete supplier only.
- Review delivery rates for concrete supply.
- Determine washout location.
- Ensure that balance loads are ordered prior to running out of concrete.
- Flagmen shall be provided as necessary by the purchaser of the concrete.



Concrete Volume Calculations

- Calculate concrete needs accurately.
- Place orders for concrete early to avoid delivery delays.
- Compare actual versus theoretical variations in concrete volume.
- Perform yield tests to ensure volume delivery accuracy.



Testing

- Full time inspection is an investment in quality.
- Check air contents of concrete (even for non-air entrained concrete).
- Ensure that slump tests are taken prior to the addition of plasticizing admixtures (to measure water consistency).



Inspection

- **Material suppliers will perform site inspections upon request.**
- **Request supplier participation for architectural projects.**
- **Ensure that specified materials are used.**



Steel Fibres

- **Determine storage and batching location.**
- **Ensure that all bags/boxes are marked with the manufacturers name, fibre type and weight of each package per ASTM A820.**
- **Ensure that specified materials are supplied.**
- **Steel fibre washout test per CSA A23.2 -16C.**



Architectural Finishes

- Review site conditions carefully to minimize interference with the work.
- Always perform a mock-up prior to execution on site (eg: stains and polished concrete).
- Ensure that the architect reviews the mock-up for acceptance prior to proceeding.
- Institute slab protection procedures for all exposed floors and completed work.



Surface Tolerances

- Use tolerance methods listed in CSA A23.1.
- Shall be measured within 72 hours of slab casting.
- Levelness tolerances do not apply to suspended slabs.
- Report results to concrete floor contractor immediately.



Curing

- **Curing is mandatory and never optional.**
- **Wet curing shall be maintained for the full duration of the curing period.**
- **Do not use curing membranes where applied finishes are scheduled (wet cure).**



Protection

- No traffic on new floors for 3 days.
- Light traffic after 7 days.
- Diaper all vehicles to protect against spills.
- Do not park vehicles on floors without protection against spills.
- Use non-marking tires or tape tires of vehicles.
- Ensure that other trades protect the floor against damage from their work.
- Clean up spills immediately.



Deficiencies

- Report any deficiencies to the concrete finishing contractor immediately.
- Ensure that any corrective work is approved by the owners representative prior to proceeding.



Questions ?

- Call us at (905) 582-9825.
- Visit us online at www.concretefloors.ca
- E-mail us at: info@concretefloors.ca