

## POLICY FOR CONCRETE OPERATIONS

**Potential Risks:** Limited space (outrigger deployment), mechanical problems, overturning or tipping over of the pump, failure of or breaking of the mast, reduced visibility for operator, danger from lightning and fire, power line contact, accessibility constraints (concrete formwork), burns, pinching or crushing, striking or trapping, splashed in the eyes, whipped by air hose, excess pressure in the pipe, prolonged exposure to noise, pinching, falls, fall of heavy objects, collapse or opening of a formwork or temporary work, exposure to hazardous products (WHMIS), poor communication.

### Objective

This policy establishes the rules that must be applied to prevent the risks involved with concrete operations on construction sites.

### Scope

This policy applies to involved parties under the authority of, and conducting any associated work for, the benefit of EBC or its subsidiaries.

At all times, this policy and procedure should be diligently applied with professionalism and respect for others. In case of doubt or conflict in its application, managers have the responsibility to contact EBC Human Resources management for guidance in its implementation.

### Distribution

This policy must be provided to all persons, working both on and off project sites, during their orientation session.

## LEGEND

-  The behavior or activity required by the organization.
-  Important non-compliance for the organization

## Planning

-  Concrete Pumps must meet industry standards, as well as current regulations.
-  Prior to arrival at the project copies of the equipment mechanical compliance certificates dated less than a year old shall be provided. These documents must be completed by a technically certified person and also be available in the equipment provided to the site.
-  The employer must ensure that only the people trained and who have the required industry certifications are permitted to operate the equipment.
-  A work method must be developed prior to the work being started and must be reviewed with the workers involved or working in the area. It must prescribe optimal positioning of persons to avoid as much as possible being under the mast during the pumping of the concrete.
-  The employer must develop a formwork plan, all signed and sealed by an engineer, and communicate it to the workers involved through a pre-concreting meeting. The criteria for determining whether a plan is required are determined as follows:



- Provisional temporary work more than 4 feet (1.2 m) high such as a formwork.
- Formwork retained by diagonal shoring (pushing pull) to ensure the retention of the walls, regardless of the size.
- Cantilever, tunnel and well formwork
- Any other type of formwork mentioned in standard CSA 269.1- Temporary works and formwork

## ○ The plan must include at least:

- Design criteria:
  - The maximum concreting rate provided for at design;
  - Type of cement
- Formwork materials and their classification;
- The installation method for which the formwork was designed;

## ○ Unclassified or unidentified lumber cannot be used in the manufacture of worker access systems, formwork or temporary work. In addition, materials with visible defects should not be used unless an engineer responsible for the design considers it acceptable to use them;

## ○ The supervisor must examine before each use the components, accessories and materials that are an integral part of the formwork and other temporary works that he manufactures or re-uses in order to detect any trace of deformation, wear or deterioration.

### Organization

## ○ The work area for the concrete pump must be defined by barrier tape, cones, barricades, or some other means of identification.

## ○ The plan of access, formwork, temporary work, temporary shelters or access systems for workers must comply with the execution plan and the documents approved by the engineer who designed them and certified before mounting the element.

### Control

## ○ The operator must not leave the controls unattended or engage in any other activity that might distract him while the machine is in operation without having stopped it beforehand and following manufacturer's recommendations. In addition, it must be stopped immediately in case of over pressurization.

## ○ Nobody is permitted to stand under a distribution mast while it is positioned and connected to a concrete pump. Nobody is allowed in the work area that can be reached by the distribution mast except for the workers pouring and finishing the concrete.

## ⊘ In addition to regular PPE, the wearing of mandatory personal protective equipment: gloves, boots and pants must be waterproof.



- The operator must take the necessary precautions to protect other persons during equipment operation, including warning the persons to move out of the way.
- ⊘ Equipment cleaning and maintenance of the concrete pump may only be performed by authorized persons according to the manufacturer's instructions.
- The operator must make sure to respect manufacturer's instructions as per addition of flexible hoses (maximum permitted length).
- The concrete pump operator must perform his pre-operational inspection and fill out the logbook prior to using the pump
- The management of temporary heating for concrete must be carried out as follows, without being limited to:
  - Putting into or out of service must be done by a qualified person;
  - All combustible materials must be more than 3 feet above, behind and on the sides and more than 22 feet in front
  - A measurement of the air quality must be made continuously in heated places with releases of fuel fumes where workers work;
  - All fittings and hoses should be checked daily.

If the rules of the main contractor, safety code or any regulation are different than those described above, the strictest shall apply.

## Roles and Responsibilities

**For the employee, worker, subcontractor, etc.:**

Everyone has the obligation to respect and enforce this policy and procedure.

### The Manager

The manager ensures compliance of this policy for the staff under their responsibility and ensures that the policy is known by involved parties. In case of conflict, they shall communicate with the human resources department.

### Human Resources Management

Human Resources management is responsible for ensuring the updates and distribution of the current policy. They must also oversee administration and determine disciplinary measures deemed appropriate for enforcement.

## Disciplinary Measures

The person who does not respect the policy mentioned above will receive:

- 1- A verbal warning stating the correction(s) to be made, documented in the form of a correction or reprimand notice.



- 2- In the case of a repeated offence, a written warning is again written in the form of a correction or reprimand notice and is given to the person and to their superior.
- 3- Subsequently, if there is a recurrence, a write-up along with stricter disciplinary action resulting in an expulsion from the workplace for 1-2 workdays will be given.
- 4- In case of any further recurrence, a third written warning will be provided that can result in dismissal or expulsion from the project or a definite period of time.
- 5- Special Case:  
When a person breaches a description for an **Important organization non-compliance**

In this specific case, the task performed must be stopped IMMEDIATELY, the first notice will correspond directly to step number 3 of disciplinary measures and the person will be expelled for a duration of 2 workdays.

In case of any further recurrence, step 4 will apply regardless of the number of prior warnings given.

## Definitions

**Pump-Truck:** A unit consists of the concrete pump, the distribution mast, transport pipes and the truck on which they are installed;

**Concrete Pump:** An apparatus used to transport concrete into rigid or flexible pipes to the locations it will be distributed and used.

**Distribution Mast:** A motorized and articulating unit including one or more deployable parts, capable of supporting and directing the transportation of concrete pipes.

**Formwork:** the entire support system for freshly poured concrete, including the molds or cladding panels, the supporting elements, the necessary materials and bracing, excluding temporary structures.

**Temporary structure:** any temporary structure used to support a permanent structure before it can support itself.

**Qualified person:** Having the knowledge, experience and training required for the exercise of his profession

References:

- Regulations on concrete pumps and distribution masts
- **Z151-09** Concrete pumps and distribution booms
- Safety code for construction work
- CSA Standard 269.1- Temporary structures and formwork

## Reference Documents

- Library of working methods

## Associated Training

- WHMIS

