

# CONCRETE SASK

## SAFETY BULLETIN: Drum Cleaning Procedures

### GENERAL PREREQUISITES

- Confirm and document ambient temperature and oxygen levels.
- Approval required from Safety Officer (or person having authority) to work in outside temperatures below -10oC or above 25oC (reference hot or cold weather work procedures as per jurisdiction).
- Complete Confined Space permit (if required in jurisdiction) and post at Drum entrance.
- Both Attendant and Worker must have Drum cleaning training.
- Both Attendant and Worker must have Confined Space Training (if required in jurisdiction).
- Both Attendant and Worker must have general safety training.
- Both Attendant and Worker must have training in Emergency Rescue Plan including acetylene torch training (if used in Rescue Plan).
- Both Attendant and Worker must have respirator fit-test.
- Both Attendant and Worker must have Working at Heights training if applicable and/or required by provincial regulations.
- Ensure all documentation is completed and filed once job is complete.
- Review of procedure should be done before commencing job and signed off by person having authority.

### ATTENDANT

- Required to be present at the access at all times.
- Must maintain direct visual and/or audio contact with Worker.
- Must have current training in Emergency First Aid and CPR.
- Should pass tools to Worker as required.

#### Attendant Personal Protective Equipment:

- Hard hat
- Safety glasses
- Hearing protection (as per jurisdiction)
- Safety boots (CSA rated)

#### Attendant Equipment:

- First Aid Kit
- Fire Extinguisher
- Particulate respirators
- Oxy-acetylene torch
- Communication to access 911 Emergency system.

### RESCUE PERSON (if required by jurisdiction)

#### Personal Protective Equipment:

- CSA approved Safety Boots.
- Hearing Protection and exposure limits as per provincial regulation.

- Gloves appropriate to task (recommended).
- CSA approved Respirator with (P-100) filters.
- CSA approved eye protection.
- CSA approved Hard Hat.
- Knee pads (optional).
- Coveralls.
- CSA approved Full body harness (if required by jurisdiction).
- Calibrated air monitor – zero it in fresh air before every entry (if required by jurisdiction).

## **WORKER**

### **Personal Protective Equipment:**

- CSA approved Safety Boots.
- Hearing Protection and exposure limits as per provincial regulation.
- Gloves appropriate to task (recommended).
- CSA approved Respirator with (P-100) filters.
- CSA approved eye protection.
- CSA approved Hard Hat.
- Knee pads (optional).
- Coveralls.
- CSA approved Full body harness (if required by jurisdiction).
- Calibrated air monitor – zero it in fresh air before every entry (if required by jurisdiction).

### **Tools and Equipment:**

- Air chisel and/or Chipping hammer (battery powered preferred).
- Air Hose.
- Ventilation (exhaust) Fan (if applicable)
  - Fan should circulate air in Drum every minute
- Step ladder CSA approved (or guard railed platform or scaffolding – the Attendant waits here).
- Extension cord.
- Explosion proof Light.

### **Truck:**

- Park on level ground away from high traffic volume.
- If outdoors park at 90 degrees to prevailing wind (for air flow).
- Rotate Drum to ensure hatch easy access.
- Remove hatch covers, ensure Drum is completely emptied of all loose “wet” concrete and residual water.
- **Follow lock out procedure:**
  - Chock block Drum and/or secure with 2 ratchet straps between the hatch openings and the frame (secure one end of the first strap to the hatch opening and the other to the driver’s side frame of the truck).
  - Apply parking brakes.
  - Apply maxi-brakes.
  - Block wheels.
  - Shut off engine.
  - Place in zero energy state.
  - Remove keys from ignition and put in Worker’s pocket.
  - Roll up windows.
  - If truck is equipped with a remote operating system, the control(s) must be disabled (turned off or batteries removed) and locked in the cab of the truck.
  - Lock cab of truck.
  - Disconnect battery or disable power through master switch.
  - Place “Do Not Operate” double sided sign in driver’s side window.
  - Place traffic cones or barricades around truck perimeter.

### **Cleaning Procedure:**

- Inspect all tools and protective equipment:
  - Pneumatic tools in good working order. All hose connections secured by whip-checks or equivalent system.
  - Electrical cords should be free of cuts or cracks and must be used with a Ground Fault Circuit Interrupter (GFCI) outlet.
  - Fans must be guarded to prevent inadvertent contact.
- Secure ladder (platform, scaffolding) in place.
- Notify Supervisor and Attendant prior to beginning work.
- Wear PPE.
- If indoors place fan to force air circulation inside Drum – start at least one minute before entering the Drum
  - Fan must not be placed where it might hinder access/egress from Drum.
  - If fan fails Worker must leave Drum immediately.
- Enter mixer through hatch (do not enter by way of the hopper). Only one person at a time should be in the Drum unless emergency conditions apply.
- Attendant to pass tools to Worker as required.
- Remove build-up by chipping from the discharge end of the Drum to the front.
- Do not chip concrete above shoulder height.
- Keep work areas clean by removing rubble before build-up causes footing to be unstable.
- Ensure removal of rubble does not endanger others in area.
- When bottom half of Drum is cleaned, remove equipment and exit the Drum.
- Remove fan.
- Remove chocks or ratchets from Drum.
- Remove ladder, platform, or scaffolding.
- Visually inspect that Drum is free and clear of any hazards.
- Connect battery or enable power through master switch.
- Unlock cab, start truck.
- Rotate Drum in discharge direction for one minute to empty waste debris.
- Rotate Drum so can clean other half.
- Follow lock-out procedure (above) again.
- Start up fan again.
- Re-enter the mixer and clean the rest of the Drum as above.

### **Clean-up Procedure**

- Remove all loose debris.
- Remove all equipment and return to appropriate storage area.
- Replace hatch covers, checking all bolts and threads.
- Remove fan, Drum chocks, and ladder and return to appropriate storage areas.
- Remove wheel and Drum blocks.
- Remove traffic cones or barricades.
- Connect battery or enable power through master switch.
- Notify supervisor of completion of task and return vehicle status to "in service".
- Unlock cab of truck and remove "Do not Operate" sign.
- Remove confined space permit (where required by jurisdiction (start time end time to be recorded)) and send copy to Company Safety officer (or those having authority - where it will be kept on file)
- If work cannot be completed in a 24 hour period begin entire procedure as new.

### **Supervisor**

Upon discovery of noncompliance/deviation from procedures the Supervisor will:

- Immediately cease Drum cleaning procedure.
- Review with the crew the reason for the work stoppage.
- Contact the General Manager and/or the area Safety Manager.

- Resolution to non-compliance issue should be documented before resumption of work.
- Disciplinary action if required as per company policy.
- Process should be audited periodically.

## **Disclaimer**

- This manuscript is intended for reference information only and presents a model of operations and an example of best practice systems. It is not intended to be used as a complete solution and any practice of the information included herein is directly the responsibility of the User.
- Information provided in "Drum Cleaning Procedure Best Practises" is provided by the author as a service to the Ready Mix Concrete Industry in Saskatchewan. The sections included do not contain all information about all possible scenarios. Nor do these sections contain all information that may be relevant to particular situations.
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Resources: ACA (Atlantic Concrete Association)  
[www.concretesask.org](http://www.concretesask.org)