



Concrete Pumping

Concrete Pumping & Liquid Screeds

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Method Statement

OPERATION: Laying liquid screed using a line pump

NOTE: This guide must be fully explained to all employees involved in the operation of the machinery. They are to sign the signature box at the end of the statement to acknowledge receipt of the information

Description and sequence

Use of vehicle mounted boom or ground line pump for transfer and placement of liquid screed.

Method

Before leaving depot

Walk-round inspection of vehicle, to ensure road worthiness, complete Fleetcheck.

Fill water tanks.

Defrost all windows (during winter conditions) to provide good all-round driving visibility.

Allow engine to “warm-up” and idle for 10mins prior to departure, to build up air reservoirs for brakes.

Arrival on site

Park safely outside the site and report to site manager.

Ensure correct Personal Protective Equipment (PPE) is worn. Specifically safety goggles, gloves, steel toe cap footwear, coveralls (and a hard hat when operating boom pump).

Go through site induction process.

Walk to area designated for pump setup area, and visibly assess environment. Check for ground stability (responsibility for suitable preparation is down to the site manager/hirer); overhead obstructions; visibility to work area; access conditions and route for delivery lorries.

Establish a code of signals between the pump operator and concrete laying gang/foreman prior to commencement of pumping works.

Pump setup

Deploy machine stabilisers (using sole plates if possible).

Level up and support the pump using the hydraulic jack stabilisers.

Unfold boom and manoeuvre into pour starting position.

Check wire safety lanyards are attached between end of boom (knuckle bend) and first flexible pipe. Remove steel and rubber pipes (necessary to reach pour starting point) from bed of pump, and carry to lay-out position.

Layout necessary pipes in approximate assembly locations.

Join pipes together using couplings with rubber sealing rings.

Position any mobility pans under couplings (as necessary) to aid with hose movements during pour.

Fix suitable rope handling cord onto last section of pipework ready for work to commence.

Once all hoses have been connected, conduct a final walk-through check of all hoses and couplings starting at point of pour and finishing at pump hopper.

Acquire 25kg of cement (client to supply) for every 20m of pipeline to be used, for pipe grouting, and position by hopper prior to delivery lorry arrival.

Priming hoses

On arrival of 1st delivery lorry, mix up grout for lining pump hoses.

Empty a bag of cement into bucket containing approx 20lts of water and mix using a small paddle to combine water and cement into a flowable grout.

Pour mixture into top of connecting knuckle on rear of hopper.

During works

Reverse concrete delivery lorry up to hopper ready for discharge.

Ensure that hopper grid is in lowered position, prior to approach of mixer lorry, and at all times during discharge and pumping operations.

Allow delivery vehicle to agitate mixer drum for a couple of minutes to avoid initial aggregate separation on discharge.

Discharge concrete into hopper to check slump and suitability of concrete prior to starting to pump through hoses.

Establish a suitable position of work – to be able to see concrete discharge into hopper and point of delivery from hose. This may involve the use of the remote control pack. Should a remote control pack be used, then any other operating controls, mounted on the pump body, must be disabled. Commence pumping of concrete at a suitable rate to allow for site operators to spread concrete; and for lorry to discharge concrete at a rate to keep hopper $\frac{3}{4}$ full.

Until concrete is flowing smoothly out of the end of the delivery hose, or when a blockage occurs in the boom pipeline, all personnel should remain clear of the delivery hose and the placing boom. (The danger zone is the area around the delivery hose in which the delivery hose can strike out. The diameter of the zone is twice the length of the delivery hose).

If a blockage occurs during the pour, the concrete pump operator must stop pumping immediately and instruct personnel to move to a safe position before attempting to remove the blockage. If the concrete pump operator needs to open the delivery pipeline to clear a blockage, he must first release the pressure inside the pipeline as much as possible, e.g. by reversing the pumping action. The pipeline must be treated as being pressurised at all times. Appropriate and adequate eye protection must be worn when opening the pipeline.

The hirer is to ensure that site personnel DO NOT under any circumstance open or attempt to open the pipeline under pressure.

Use horn to signal to concrete lorry driver to stop discharge if the need arises to move hoses, disconnect hoses, or to stop pour for any other reason.

Move boom as necessary whilst making suitable progress across the pour area.

On completion of lorry discharge, lower boom to allow end of delivery hose to rest on floor.

At the end of discharge of each load remove any disconnected hoses and wash out immediately to avoid concrete drying inside hoses and pipes.

If the concrete pump has to be left unattended, the operation of the boom and pump must be isolated.

Between concrete lorry deliveries

Agitate the contents of the hopper should the need arise – long intervals between delivery vehicles, rise in ambient temperature, etc.

On completion of works

Concrete in the hopper should be discharged until the only a small amount is left in the hopper (just covering the ram inlet chambers)

The pressure in the pipeline should be released by retracting concrete into the hopper.

The access point in the rear knuckle (immediately after the hopper) should be opened, a wetted sponge ball inserted into the line, and the access cover re-secured.

A cage and/or protective back board, must be fitted/erected at the end of the delivery hose (to receive and confine the cleaning ball).

The end of the discharge hose should be secured to avoid any whiplash.

All laying gang members should be moved away from the discharge hose, to a safe area.

The cleaning ball should then be advanced through the remaining pipes and hose, at reduced engine revs, until it emerges at the discharge point.

If compressed air is to be used to clean the lines, do not open any clamps/fittings until you are sure that all the pressure in the pipeline has been discharged or released.

The ball should then be recovered and thoroughly cleaned and washed off.

All hoses should be thoroughly washed out and stored on the lorry bed.

All couplings should be cleaned, washed and stored on the lorry bed.

The boom should then be retracted and stored on the purpose-made cradle on the lorry bed.

A suitable site for emptying the remaining concrete from the hopper should be identified, and the pump moved to this location.

The retaining lever on the lower door of the hopper is then released, and the door swung away to allow the remaining concrete to be discharged from the hopper.

Flush out all the intake rams, pistons and thoroughly rinse all concrete and grout from the hopper.

Once fully flushed, close the lower door of the hopper and secure with the retaining lever.

Ensure all pipes, clips, hoses, wash out lines and sole plates are stowed in their respective areas on the lorry bed, and are ready for road travel.

Complete advice note and present to client's representative.

Sign out (if required) from site and return to depot.

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DECLARATION;

I have read, understood and asked any questions concerning the operation and safety of the concrete pump.

Operator Signature _____ Name _____

Date _____

Site Manager Signature _____ Name _____

Date _____