

Health and Safety Guidance notes regarding the use of a concrete pump

Major risks to health and safety when using a concrete pump

When ordering a concrete pump a proper risk assessment should be made by the site management regarding the siting, operation of the pump and the protection of the personnel involved in laying the concrete.

This guidance note lists various hazards we have recognized from our experience which the site management should take into consideration before ordering a pump. This is a guidance document only.

Siting of the concrete pump

- Stability of the ground to support the weight of the outrigger legs of boom pumps. No legs are to be set up near to a trench or hole when the edge of a trench / hole is less than 1.5 times the depth of that trench away from the leg support plate.
- Proximity of the boom of the pump to electricity lines. Note; a 6 metre safe distance is to be maintained.
- Proximity of the boom of the pump to telephone lines.
- Proximity of the boom of the pump to live traffic lanes including pavements, roads and rail lines. If the boom is capable of swinging over these then a discussion must occur with the operator before the job starts to ensure he is aware of this hazard.
- Proximity of the boom of the pump to scaffold which is in active use. Measures are to be taken by the site management to ensure safety is maintained for example the scaffold taken out of service during the job.
- A suitable position where the pump operator can stand where he has sight of both the pump and the end of the boom where the laying personnel are working. If this is not the case then the site are to provide a qualified banksman to relay signals. Any signals are to be agreed in advance with the pump operator.

Operation of the concrete pump

- Splashes of grout or concrete from the hopper - personnel are to wear the correct PPE in the location of this hopper. Safety goggles, waterproof gauntlets / gloves, full cover clothing, helmet, safety boots (it would be better if safety wellington boots are used if wading in concrete), high viz.
- Blockage of the line at the start of pumping. This may result in explosive release of concrete and or whipping of the boom and flexible end hose(s). No personnel shall stand within the area of twice the length of the end hose from its fixed pivot point at the start of pumping and shall only approach the line when the pump operator says it is safe to do so. If standing near to this zone then full PPE shall be worn as above.
- Site personnel shall not unclip any clamps from the line without the agreement of the concrete pump operator.
- Bodily impact from movement of the boom and end hose during pumping. Signals from any personnel holding the end hose shall be agreed with the pump operator prior to starting pumping.
- Falling concrete from a boom hose whilst moving the hose from one location to another. The personnel shall wear the correct PPE on site as stipulated above. The pump operator shall ensure no personnel are below the route of a travelling hose.

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- Flexible hoses can be bent but never kinked by the site personnel as this may cause excess pressure and if the hose is weak causing potential rupture. Anyone handling the hose or involved in the laying of the concrete shall wear the correct PPE as described above.
- No site personnel shall climb on the pump or attempt to operate it in anyway or introduce foreign objects into the pumping hopper / mechanism.
- Cleaning of line using compressed air. All personnel shall take instructions from the operator and as a minimum stand pump side of the end hose.
- Cleaning out of waste concrete from the pump hopper and delivery lines needs to take place in a location which has been agreed prior to start of the job. Due regard to environment being taken into account by the customer and how he intends to make good the area.

Protection of personnel involved in the concrete pumping operation

- All personnel shall wear full PPE which are safety goggles, waterproof gauntlets / gloves, full cover clothing, helmet, safety boots (it would be better if safety wellington boots are used if wading in concrete), high viz.
- No site personnel shall attach themselves to the end hose or any of the delivery pipes by any method.
- All personnel shall stand clear of the end hose until they are instructed it is safe to move nearer by the pump operator. This is usually when the concrete is flowing freely from the end of the hose.
- Anyone handling the end hose shall have already agreed hand signals with the pump operator.
- Any cement splashes received in contact with the skin shall be washed off immediately.
- Clothing which has become wet through to the skin as a result of contact with the concrete shall be removed immediately and the skin beneath washed thoroughly. New dry clothing is then required before recommencing work.