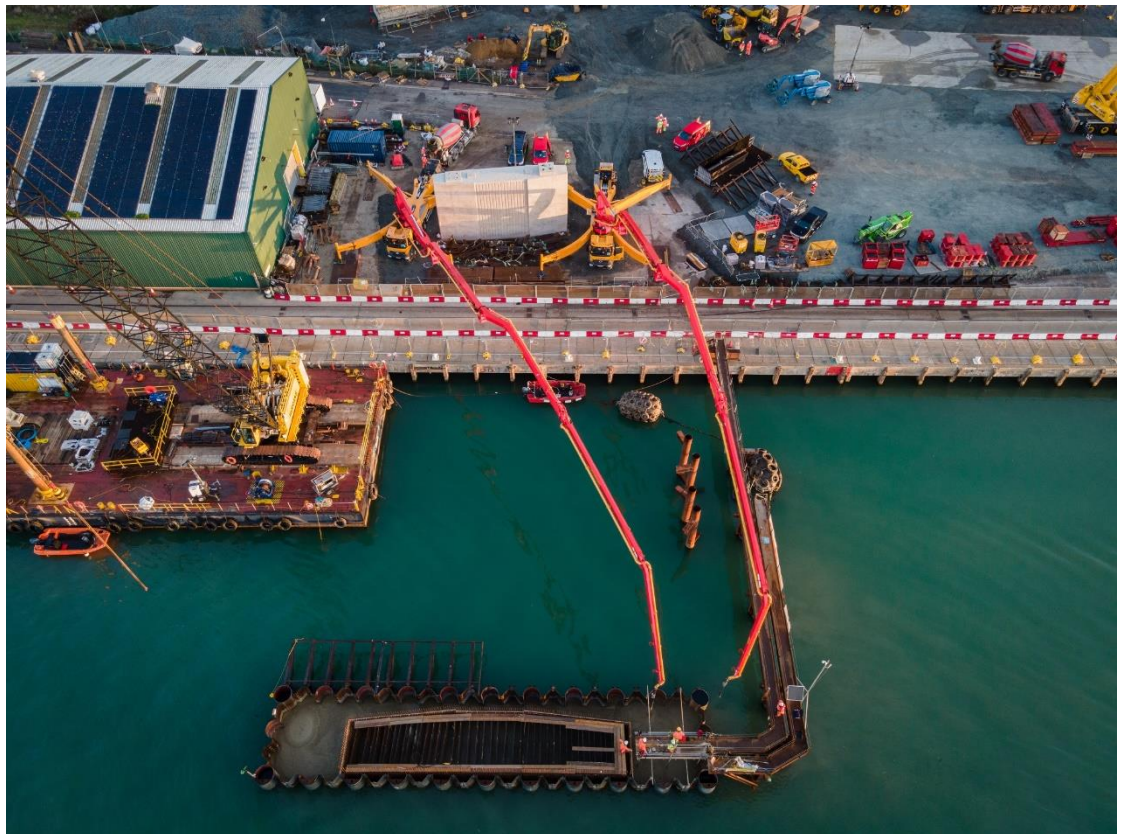


Safety Publication



Safe Use of Concrete Pumps



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Safe Use of Concrete Pumps

CPA Good Practice Guide



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Foreword

Concrete pumps and concrete placing booms make a significant contribution to the efficient delivery of the construction process. The development of concrete pumps has allowed concrete to be pumped under pressure through pipelines across great distances and in significant volumes.

Unfortunately, the very versatility that makes them so useful also provides scope for unsafe use and this has, over the years, led to a significant number of serious accidents, tragically including some fatalities. Not only do these accidents have a terrible cost in terms of human suffering, they also have a significant financial cost for all concerned. Consequently, there is a very strong business case for improving safety performance.

As with all construction equipment, the safe operation of concrete pumps depends on a number of factors, including the selection and maintenance of the pump and placing boom, the planning and supervision of their use and the competence of the operator and other personnel. If any of these are deficient, the risk of a serious accident increases significantly, so it is essential that site managers ensure that all concrete pumping operations are planned, supervised and carried out safely.

This guidance, first published in 2004, has been devised and updated a number of times by a British Concrete Pumping Group (BCPG) working party that represents all parts of the industry to provide continued clarity on the safe use of concrete pumps. This includes planning, role of personnel, training and familiarization of personnel, safe use, maintenance, inspection and thorough examination.

The BCPG guidance remains a straightforward, comprehensive publication which should be easy to adopt. It represents good practice defined by the BCPG, which may go further than the minimum that is needed to be done in order to comply with the law.

I thank those who have been involved with the latest update to the guidance and commend the guidance to anyone who owns, supplies or controls the operation of concrete pumps. Please read the publication and turn the advice into action.



Brendan Murphy

Chair of the British Concrete Pumping Group

1.0 Introduction and Scope

This Good Practice Guide has been devised and continually updated by the British Concrete Pumping Interest Group, an interest group within the scope of the Construction Plant-hire Association.

It should be used in conjunction with the relevant legislation and guidance to ensure the safe use of concrete pumps. This document will provide the guidance necessary to ensure that operations involving concrete pumps are carried out safely and efficiently.

It became clear to members of the Interest Group that such a Good Practice Guide was necessary to define safe systems of work that ensures the solid foundations required for safe and successful operations, which was first launched in 2004 and updated in 2013 and 2025.

It should be noted that this document provides the minimum requirements for the operation of all types of concrete pumps and in addition to any other guidance and legislation that might be appropriate.

The Good Practice Guide gives recommendations for the safe use of truck-mounted concrete pumps. Some sections apply to the use of static concrete pumps, trailer-mounted concrete pumps and tower-mounted booms. It however does not cover plaster and screed-type pumps.

It further does not relate to the construction of the machine as this is covered by the European Standard for concrete pumping and spraying machines by BS EN ISO 12001.



2.0 Definitions

For the purposes of this Good Practice Guide, the following definitions apply:

additive

a material which is added to concrete to change the properties of the mix

ball catcher

a device fitted to the delivery end of a pipeline designed to catch the sponge rubber device used for cleaning the pipeline

blanking device

a component designed by the concrete pump manufacturer, fitted securely at the outlet end of a placing or delivery hose with a coupling or other device to prevent concrete from falling out of the hose whilst the concrete placing boom is being moved to a new position

boom tip safety restraint

a device, fitted to the end of the concrete placing boom, which is attached to the placing hose and which is designed to retain the placing hose if the coupling attaching it to the boom pipeline fails

competent person

a person who has such practical and theoretical knowledge, experience and training as necessary to safely carry out the functions to enable them to carry out their duties, without risk to them or any other persons and without risk of damage to plant or property

concrete

a homogenous mix of cement, graded aggregate and water, to which non-toxic additives may be added

concrete placing boom

a device to support and position the delivery pipeline. It can incorporate folding, derricking and slewing motions and be mounted on a vehicle or on a plinth or structure

concrete pump

an item of plant used for pumping or spraying concrete. It works by pistons or a rotary pump, whereby the material to be transported is conveyed to the placing position through a pipeline alone or through a pipeline attached to a concrete placing boom.

concrete pump assistant

person supplied by the owner or hirer and trained to work with concrete delivery pipelines

delivery hose

a flexible hose used in the pipeline other than as a placing hose i.e. a double ended hose

hirer

company, firm, person, corporation or public authority taking the Owner's plant on hire, including their successors or personal representatives

inspection certificate

document containing the results of an inspection of the concrete pump by a competent person and including the details specified in Annex 6

interlock

a switch usually located on the hopper, which prevents operation of the machine when activated

owner

company, firm or person letting the concrete pump on hire, including their successors, assignees or personal representatives

pipelines or delivery lines

pipes, whether steel or rubber, through which the concrete is conveyed. They will include, pipes, bends, hoses, coupling connectors and any valves inserted in the line. Each element of the line must be capable of resisting the likely maximum pressure exerted by the concrete pump

placing hose

a flexible single ended hose to provide freedom of movement in the final placing of concrete

receiving hopper

the area into which the mixed concrete is discharged. It will generally contain the valve gear for transferring the concrete from the concrete pistons into the delivery line. It may also contain mixer paddles on a revolving shaft. Access doors and an interlocked protective grille must be fitted to prevent persons from coming into contact with the moving machinery

remote control box

a portable control panel which is connected to the concrete pump by a wired or wireless system, allowing the concrete pump operator to operate the machine from a remote position. The control levers / switches may operate the placing boom movements, the concrete pump and the vehicle engine

safety induction training

instruction given by the Principal Contractor or the Hirer to communicate the site safety rules, safe access on the site, the location of welfare facilities, etc. The provider of the training may determine that the delivery of induction training on the first visit to the site is sufficient, but may insist on further training if site conditions change significantly

signaller

a person who has had training to give directions to the concrete pump operator by a recognised code of signals or by verbal communication

sponge rubber cleaning device

a piece of sponge rubber, usually in the shape of a ball, which is inserted into the delivery pipeline for the purpose of cleaning the inside of the pipes. It is propelled along the pipeline either by the action of the pump (forward or reverse), by compressed air or by water pressure

stabilisers

extendable structural members on the pump unit to increase the dimensions of the stability base

trailer or tracked-mounted concrete pump (also known as a static pump)

a concrete pump that is mounted on a trailer frame chassis that can be towed, or be mounted on a tracked chassis and be self-propelled

truck-mounted concrete pump

a concrete pump that is mounted on a self-propelled vehicle (boom and non-boom types)

plant/vehicle marshaller

a person who has had training to give directions to the operator of a vehicle mounted concrete pump during manoeuvring of the vehicle on site, by a recognised code of signals or by verbal communication

wash out adapter

a short length of pipe with one end blanked off and a connection for a water / compressed air hose for cleaning purposes. A secondary valve(s) should be fitted for releasing the pressure when necessary, along with a working pressure gauge

3.0 Selection of Personnel

The safe operation of a concrete pump relies heavily on the selection of suitable personnel who are competent to carry out the required duties. Those responsible for the selection should ensure that an operator is efficiently organised in order to promote good teamwork in the working situation.

Nobody should be selected whose efficiency is impaired by alcohol, drugs or other influences. Employers should have a policy on drugs and alcohol.

3.1 Operator Requirements

The concrete pump operator should:

- Be competent;
- Be over 18 years of age if driving a concrete pump on the public highway; (See Section 8)

NOTE: *The minimum age of 18 years only applies if one of the following criteria are met:*

- *The driving test and Driver Certificate of Professional Competence (Driver CPC) Initial Qualification has been passed;*
- *The operator is learning to drive or taking a driving test for this category or the Driver CPC Initial Qualification;*
- *The operator is taking a national vocational training course to get a Driver CPC Initial Qualification;*
- *The operator has had their driving license before 10 September 2009, the CPC periodic training must be taken within five years of this date.*

If the above criteria are not met, the minimum age is 21 years for vehicles over 7.5 tonnes MAM.

- Have adequate communication skills;
- Be medically and physically fit, with particular regard to eyesight, hearing and reflexes; (see Section 3.2)
- Be physically able to operate the concrete pump safely;
- Be able to judge distances, heights and clearances;
- Be adequately trained for the class of concrete pump which they operate and hold a CSCS-logged card (see Section 5.0)
- Have sufficient knowledge of the machine and its safety devices;
- Be fully conversant with the duties of the signaller and should understand the signals code agreed with them;
- Be authorised to operate the machine;
- In the case of a mobile concrete pump operator, be qualified to drive a large goods vehicle (Class C) (See Section 8)

3.2 Medical Fitness

Employers have a duty to both ensure the health of their employees and to ensure that any employee is fit to undertake the tasks they are required to carry out by ongoing assessment. Re-assessment timescales may be dictated by contractors.

Further guidance on assessing the medical fitness of construction plant operators is given in the Strategic Forum for Construction - Plant Safety Group *Medical Fitness to Operate Construction Plant - Good Practice Guide*.

3.3 Signaller Requirements

An appointed signaller should be able to:

- Relay signals from the placing gang to the pump operator;
- Direct safe movement of the concrete placing boom;
- Give clear and precise verbal instructions where audio equipment, e.g. a two-way radio, is used.



4.0 Selection of Concrete Pump Hirers

When a contractor is assessing suitable suppliers for their concrete pumping requirements, considerations should be given to the following good practice criteria:

- Has sufficient and appropriate financial standing;
- Has adequate insurance cover;
- Has sufficient levels of infrastructure, facilities and arrangements for maintaining vehicles in a fit and serviceable condition and be able to demonstrate legislative compliance in this respect;
- Has sufficient health and safety resources and management capabilities;
- Meets standards for industry compliance schemes (such as FORS, Mission Zero etc.);
- Is compliant with relevant ISO and BSI standards;
- Has in place procedures to meet environmental and transport-based policies and emission standards;
- Procure or possess sufficient training resources – particularly for machine operators and supporting personnel;
- Be able to demonstrate machine operator and maintenance personnel and other relevant individual competence;
- Be able to demonstrate compliance with this Good Practice Guide.

5.0 Skills and Certification

NOTE: *The Health and Safety at Work etc. Act 1974 Section 2(2)(c) requires the employer to ensure, so far as is reasonably practicable, that employees receive “such information, instruction, training and supervision as is necessary to ensure” their health and safety at work.*

5.1 Training Syllabus

The training of the concrete pump operator should include:

- Safety awareness;
- Knowledge of the employer's and site risk assessments;
- Knowledge and use of any personal protective equipment (PPE) provided;
- Pre-driving checks that is aligned with the requirements of the DVSA Guide to Maintaining Roadworthiness;
- Necessary daily and weekly checks and maintenance of the machine;
- Safe siting, rigging and de-rigging of the concrete pump in accordance with the manufacturer's instructions, in site conditions;
- Operating the concrete placing boom safely, if applicable;
- Operating the concrete pump;
- Cleaning out of the concrete pump;
- Working with delivery lines;
- Basic knowledge of concrete composition;
- Awareness of the dangers of compressed air;
- Working near to overhead power lines;
- Dealing with emergency situations;
- Working with blockages;
- Personal health and safety considerations;
- Driving the relevant vehicle if applicable;
- Documentation in relation to the job;
- Load security training;
- Hydraulic injection injury awareness training.

5.2 Training and Competency Certification

Any plant operator-based certification or carding should bear the CSCS Logo and issued by a CSCS-alliance card scheme member. This indicates that it is in compliance with the Construction Leadership Council's card scheme criteria for the construction sector. The training should be to a national recognised standard that is measurable against the plant operations national occupation standards (NOS).

Card schemes such as the Construction Plant Competency Scheme (CPCS) make publicly available training and assessment standards for a range of concrete pumping types (CPCS categories A06, A44 & A72). The completion of training must be followed by the issue of a CSCS-logoed card and achieve the relevant National and Scottish vocational qualification (NVQ/SVQ). (See Annex 5)

5.3 Periodic Assessment

Periodic assessments of each concrete pump operator should be carried out by a competent person to verify the maintenance of safe standards and to assess any further training needs using the standards indicated in Section 5.1. For concrete pumps, the BCPG recommended that regular assessments are undertaken whenever necessary e.g. due to machine type or equipment changes/updates, client feedback etc.

5.4 Transfer to a Different Machine

Specific familiarisation training and assessment should be carried out whenever an operator is transferred to a different machine.

5.5 Supervision During Training

Personnel undergoing training and those newly qualified should be appropriately supervised when on site.

5.6 Proof of Training

The operator or their employer should always be able to show proof of training and competence to the owner or site management. Scheme cards should not be accepted at face value and assessment of ability (whether desktop or through demonstration) should be undertaken on new employees or where new working practices are adopted, or new machine-types being used.

5.7 Additional Training

The appointed signaller and operator should be instructed on:

- The use of the code of signals as detailed in Annex 4;
- The use of any communications device supplied;
- New and emerging technologies;
- New machine types or processes
- Any special risks on the site, e.g. overhead obstructions.



6.0 Management of the Concrete Pumping Operation

All concrete pumping pours should be planned to ensure that they are completed safely and that all significant foreseeable risks have been taken into account. Planning should be carried out by personnel who have the appropriate expertise. In cases of repetitive concrete pours, this planning may only be necessary in the first instance, with periodic reviews to ensure that no factors have changed.

6.1 Management of the Operation

As contained within the CPA Model Terms and Conditions of Hire – Concrete Pumping Supplementary Conditions, the hirer will be fully responsible for the management of the entire pumping operation that is in accordance with the terms of the contract. The hirer shall provide and ensure that a competent supervisor is in attendance at the beginning, throughout and at the end of the pumping operation in order to assist the operator. This provision will be at their own expense.

6.2 Machine Risk Assessment

The concrete pump owner should be able to supply a risk assessment to the customer, detailing the generic risks in concrete pumping.

6.3 Information for the Hirer

To assist the hirer in selecting the correct model of concrete pump, the concrete pump owner should be able to supply details of the:

- Maximum reach of each concrete placing boom, both horizontally and vertically;
- Standard equipment carried on a truck-mounted concrete pump;
- Weights of pipeline, placement hoses, delivery hoses and accessories;
- Maximum likely loadings for each of the stabiliser bases;
- Footprint of the machine with all stabilisers extended in accordance with the manufacturer's instructions for the specific machine;

NOTE: *Short rigging must only be undertaken on machines specifically equipped with the appropriate safety systems*

- Boom configuration;
- Maximum safe wind speed for the operation of the boom.

NOTE: *The maximum pressure generated by the pump will depend on the delivery situation and other factors. This should be the subject of discussion between the Owner and Hirer.*

6.4 Concrete Pump Hire Checklist

The hirer should make reference to a concrete pump hire checklist (see Annex 1), to assist the owner to provide the correct machine for the required activity.

6.5 Safe System of Work

Following a site-specific risk assessment, a safe system of work should be established by the hirer and this should be followed for every concrete pumping operation, whether it is an individual pour or a series of pours.

The hirer should devise a safe system of work from the arrival of the truck-mounted concrete pump on site to its departure. The following should be included in the safe system of work:

- The preparation of a method statement;
- The planning of the operation;
- The selection, provision and use of a suitable concrete pump and boom;

- The need for additional delivery pipes in addition to the standard equipment carried;
- The position of the concrete pump and any necessary preparation of the site for its positioning;
- The site of the pour, taking into account proximity hazards, space availability and suitability of the ground to support the weight of the concrete pump;
- The provision of properly trained and competent personnel who have been made aware of their relevant responsibilities under the Health and Safety At Work, etc. Act 1974 - Sections 7 & 8;
- The requirement for all personnel to be able to communicate clearly;
- Adequate supervision by competent personnel;
- Ensuring that all necessary documentation is available for inspection and valid;
- Preventing unauthorised use of the concrete pump and boom;
- Ensuring the safety of persons not involved in the pumping operation;
- The provision of a clean-out area, taking into consideration all environmental issues;
- The provision of an adequate piped water supply at the pump position;
- The provision of a supply of suitable and sufficient concrete of a consistency which is readily pumpable at a sustainable rate;
- Adequate lighting for all aspects of the concrete pumping operation.

6.6 Working Hours on Site

The operation must be in compliance with the Working Time Regulations 1998, which limits a personal average weekly working hours maximum of 48 hours over the agreed Reference Period, unless certain opt-outs apply.

Working time is defined when someone is:

- At the employer's 'disposal' – this means the employer can direct them as to what they can or cannot do in that time;
- Carrying out work activities, duties and any training.

Working time usually includes time spent:

- Travelling to a customer or client premises for example if the job is a travelling salesperson;
- Training that someone needs to do the job.

The hirer is responsible for planning the time taken to carry out the pour. If this is extended past normal working hours (as defined in clause 1(h) of the CPA Model Conditions), provision must be made for relief operators. These must normally be booked in advance of the pour, with adequate written notice and any additional costs passed on to the hirer

6.7 Fatigue Management

During the planning stage, the working hours and nature of work being carried out by the operator and others involved in the process needs to be considered to minimise fatigue, which can lead to mistakes and incidents etc.

Fatigue is considered to be a decline in mental and/or physical performance that can result from:

- prolonged exertion;
- sleep loss;

- monotonous or complex work;
- machine-paced;
- external or personal activities;
- other workplace stresses.

There is a legal duty upon employers to manage risks from fatigue and compliance with the Working Time Regulations may not be enough to manage work-place fatigue.

The HSE guidance document HSG 48 – *Reducing error and influencing behaviour* provides advice on the management of workplace fatigue - <https://www.hse.gov.uk/pubns/books/hsg48.htm>).

Travel time before and after time on site should be taken into account when managing fatigue.



7.0 Selection of Concrete Pumps

7.1 Documentation

When the pump arrives at site, the following documentation should be available on request and prior to the start of the pumping operation:

- Inspection Certificate/ Certificate of Conformity if less than 12 months old;
- Operator's CSCS-logoed card;
- Daily /weekly check sheets;
- Evidence of servicing, tests etc. (see Section 16 & 17);
- Evidence of operators medical fitness;
- That it meets Construction & Use (C&U) requirements (for vehicle-mounted units).

Evidence of the Roadworthiness Inspection Sheets should be supplied if requested.

7.2 Size and Pumping Capacity

Concrete pumps are available in a number of types, sizes and pumping capacities. The characteristics of each concrete pump should be considered in relation to the job requirements. (See Section 7)

7.3 Hirer's Responsibilities

Responsibilities of the hirer in requesting a suitable concrete pump should include:

- Access to and egress from the site suitable for the size of the machine;
- Sufficient area for all the machine's stabilisers to be fully deployed;
- The ability of the ground to support the loads likely to be imposed by the machine's stabilisers;
- Underground restrictions, e.g. cellars under pavements, cables close to the surface etc;
- Overhead obstructions, e.g. cables and structures etc. It is the hirer's responsibility to devise a safe method of working in the vicinity of overhead cables;
- The reach of the boom to the most remote point of the concrete pour;

NOTE: *In the case of truck-mounted pumps, consideration ought to be given to the optimum concrete placing boom size for site conditions. Correct selection of the concrete placing boom will reduce any safety risks.*

- Suitable access for the ready-mixed concrete truck to the receiving hopper of the concrete pump;
- The need for a signaller in circumstances where the operator will not be able to see the delivery end of the pipe-line or hopper and which requires the supply of suitable alternative communication equipment;
- Adequate protection of the permanent works from potential damage by the concrete placing boom;

NOTE: *It is the hirers responsibility to ensure that adequate insurance is in place in the event of damage*

- Any special operational requirements or limitations imposed;
- The need for additional delivery pipeline to supplement the boom pipeline;
- The need for properly designed support for the additional pipeline;

- The need for the hirer to maintain any hirer-owned pipeline, for which the concrete pump owner has no responsibility;
- The conditions of hire, particularly in respect of insurance aspects;
- Supply and safe set up of suitable and adequate power cables for electrical-driven pumping equipment etc.

7.4 Machine and Type Selection

Concrete pumps are available in a range of types. This includes, truck-mounted types, trailer-mounted types, static types and powered by either IC-engine power units or electrical-powered units.

The concrete pump owner should select the machine to be sent to a site on the basis of the following:

- Information provided in Section 7;
- The distances to be driven or transported to and from the site by the operator to reduce the road safety risk element;
- The hours worked by the operator on the previous day and the estimated rest period between their activities;
- The need for additional equipment e.g. lifting, towing trailers into place;
- The need for additional labour e.g. for pipeline work.

Truck-mounted pumps should meet Euro 6 compliance, particularly for entering urban clean air/low emission zones restrictions such as Clean Air Zones (CAZ), Low and Ultra Low Emission Zones (LEZ/ULEZ). Units mounted on lighter motor vehicle chassis e.g. below 7.5 tonne MAM should meet as a minimum, Euro 4 standards.

For non-NRMM equipment such as generators, compressors and other supporting equipment, local and regional air quality restrictions will also need to be complied with. Electrically-driven units may be powered using the site's supply, by an IC-engined generator or by a battery energy storage systems (BESS).

More information on clean air zones can be found at:

<https://www.gov.uk/browse/driving/clean-air-zones-emissions-electric-vehicles>

7.5 Static Placing Booms

Placing booms require installation onto plinths or other designated structures and may alter as the corresponding construction project advances. Due to the size, weight and location of a placing boom, installation can be hazardous and will require planning and co-ordination using lifting equipment and accessories, which follows a risk assessment and method statement to determine safe and effective installation.

The relevant manufacturer's installation and decommissioning procedures need to be rigidly followed, supported by the training and supervision for those carrying out the installation and removal, based on consultation with the relevant manufacturer.

8.0 Travelling to and from the Site (Truck-mounted Concrete Pumps)

8.1 Place of Work

Employers and employees should consider the journey in the truck-mounted concrete pump to and from the site as part of the workplace.

8.2 Planning Journey Time

Sufficient time should be allocated by the employer to allow the concrete pump operator to drive to the site without the need to exceed speed limits, or take risks on the road in general.

8.3 Pre Journey Checks

The concrete pump operator should use the time allocated by the employer to ensure that the concrete pump is safe to be travelled on the public highway e.g. by checking the function of the vehicle's lights and other essential pre-driving checks – See Annex 7.

8.4 Behaviour on the Road

The concrete pump operator should not take unnecessary risks on the journey, abide with the required regulations, observe the highway code, taking care for their own safety and health and that of other road users and others who may be affected by their actions.

There are in place initiatives, particularly in urban and large populated areas, to minimise collisions with vulnerable road users such as cyclists and pedestrians. Advice has been issued by transport-based authorities on additional equipment that is recommended to be fitted to working vehicles to aid driver all-round visibility and reduce blind spots where a vulnerable road user may be hidden.

Client and contractors in compliance with vulnerable user collision-reduction schemes are mandating within their supply chain, that vehicles entering their sites are fitted with a minimum number of additional vision-related safety features. Further information on safe driving and vulnerable road user initiatives can be found through the Fleet Operator Recognition Scheme (FORS) who produce toolbox talk material for safe driving and vulnerable road users – www.fors-online.org.uk

8.5 Local Authority Requirements – Direct Vision Standards

The Transport Authority for London (TfL) have introduced a Direct Vision Standard (DVS) and Safety Permit Scheme for HGVs over 12 tonnes gross vehicle weight and need to obtain a safety permit before entering and operating in most of Greater London. The DVS gives HGVs a star rating, measured by how much a driver can see directly through their cab windows. Safe System measures help reduce the danger of HGVs that do not meet the minimum star rating for an HGV Safety Permit.

Vehicles can have a rating of zero stars (the lowest rating, with poor direct vision) up to five stars (the highest rating with excellent direct vision). If an HGV is rated one to five stars, the owner can apply for a permit without the need to provide any additional evidence. If an HGV is rated zero stars, the owner will need to make their vehicle safer by fitting it with Safe System improvements.

Certain HGVs and vehicles may be fully or partially exempt. Fully exempt vehicles are not required to hold a permit, but the owner can still apply for one for their records. Partially exempt vehicles include certain vehicle types which are exempt from specific Safe System requirements, as they make fitting of specific equipment impractical or impossible.

From 28th October 2024, the standard changed but the below link can supply the latest information and requirements.

In summary:

- Vehicles with zero, one or two stars will now need to be fitted with a progressive safe system fitted, to operate in London post 28th October 2024.

Note: More information, downloads and application forms can be found at: <https://tfl.gov.uk/info-for/deliveries-in-london/delivering-safely/direct-vision-in-heavy-goods-vehicles>

8.6 Legal Requirements

Vehicles travelling on the public highway need to meet Road Traffic Act requirements in relation to:

- Driver licencing and age restrictions;
- Maximum Authorised Mass (MAM);
- Gross Train Weight (GTW);
- Vehicle Excise Duty;
- Driving hours, tachographs etc;
- Carrying of loads;
- Plating and testing.

In the case of concrete pumps that are mounted on a truck chassis and are compliant to the Construction and Use Regulations (C&U), the driver must hold the relevant category entitlement for the MAM of the vehicle on their driving licence. In most cases, this would be category C - however in some cases, vehicles may be classed as 'engineering plant' on the V5C. This does not take precedence over the definition of 'engineering plant' as listed in section 3(2) of the C&U regulations. As such, this means they cannot be driven on a category B.

Note: Information on driving license categories and entitlements can be found at <https://www.gov.uk/driving-licence-categories>

Vehicles that are not compliant with C&U regulations and are classed as 'engineering plant' are exempt from the need for vocational licences and can be driven on a category B licence.

Note: INF52 - Large vehicles you can drive using your car, bus or truck license provides further information.

Further restrictions apply to the towing of trailers with cars and vans, where owners/operators must check their towing vehicles permitted gross train weight (GTW). GTW will determine the permitted total weight of the towing vehicle, the trailer and its load:

- Those holding category B entitlement and having passed their test pre-1 January 1997 can drive a vehicle and trailer combination up to 8.25t MAM;
- Those holding category B entitlement and having passed their test on or post-1 January 1997 are restricted to driving vehicles up to 3.5t MAM and a trailer that weighs up to 3.5t MAM, within the towing limits of the vehicle;
- Those holding category BE entitlement and having a valid-from date on their licence pre-19 January 2013, can tow any size trailer within the towing limits of the vehicle;
- Those holding category BE entitlement and having a valid-from date on their licence post 19 January 2013 can tow a trailer up to 3.5t MAM, within the towing limits of the vehicle.

8.7 STGO Requirements

The dimensions and weights of vehicles used on British roads are regulated by the Road Vehicles (Construction & Use) Regulations 1986 (C&U) Regs and the Road Vehicles (Authorised Weight) Regulations 1998 (AW) Regs.

Special types vehicles are those which do not meet the C&U and AW Regs but can be used outside these rules under the authority of the Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO).

Vehicles which do not comply with an STGO order can be used on the road if Special Orders have been issued by:

- National Highways regarding abnormal loads not covered by C&U and STGO;
- the Vehicle Certification Agency (VCA) regarding special vehicles and divisible loads such as crane ballast outside the scope of C&U and STGO.

A movement order, also known as a special order, is required for the movement of abnormal loads, which are defined by the Road Traffic Act 1988 as vehicles exceeding certain weight, length, or width limits. This includes vehicles that exceed 150,000kg in gross weight, 16,500kg in axle weight, or 6.1 meters in width. Additionally, a movement order is needed for certain categories of abnormal loads, such as those with a gross weight exceeding 150,000kg, a gross axle weight exceeding 16,500kg, or a width exceeding 6.1 meters.

- **Abnormal Load Definition:**

The definition of an abnormal load is based on the weight, length, or width of the vehicle and/or load;

- **Special Order Requirements:**

A movement order is needed for vehicles exceeding the limits outlined in the Special Types General Order (STGO) regulations;

- **Notification Requirements:**

Hauliers are required to notify the relevant authorities (police, highway, and bridge authorities) before moving abnormal loads, according to National Highways;

- **ESDAL (or equivalent system) System:**

The Electronic Service Delivery for Abnormal Loads (ESDAL) system can be used to notify authorities for abnormal load movements. Other notifications systems are available;

- **Form VR1:**

If the overall width of the vehicle or load exceeds 5.0 metres but not 6.1 metres, a Form VR1 approval is required;

- **Timeframes:**

For movements exceeding 80,000kg (but not 150,000kg), two clear days' notice is required to the police and five clear days' notice to the road and bridge authorities. For loads exceeding 150,000kg, a special order is needed.

8.8 Vehicle Special Order Requirements

Vehicles that fall within the scope of STGO need to have been placed onto a Vehicle Special Order (VSO) by the Vehicle Certification Agency, that authorises movements on the roads in the UK (excluding Northern Ireland) for the listed vehicles. VSO's are time-bound.

The authorisation only applies if:

- The vehicles are being operated by or on behalf of the listed organisation;
- Are listed in the schedule to the order, and;
- The vehicles are specially designed and constructed, or are specially adapted, for the purposes of pumping liquid concrete, and has permanently-mounted pumping equipment.

The vehicles need to comply with all of the requirements of a mobile crane operated under the Road Vehicles (Authorisation of Special Types) (General) Order 2003 as amended, with the exception of references to lifting operations, which are to be read as references to concrete pumping operations.

The vehicles can only be used for, or in connection with, the pumping of concrete and a copy of the order needs to be carried in the cab of any vehicle listed in the order.

More information on STGO and movement order requirements can be found at:

<https://www.gov.uk/government/publications/special-types-enforcement-guide/special-types-enforcement-guide>

<https://nationalhighways.co.uk/media/ox4pi2qe/aide-memoire-notification-requirements-for-moving-abnormal-loads.pdf>

Note: *The above information relating to legal and regulatory requirements for road travel were correct at the time of publication. Owners should, however, check with the relevant authorities on any latest updates or alterations.*

8.9 Static, Trailer and Tracked-mounted Concrete Pumps

The delivery, loading/unloading and collection of frame-mounted, trailer-mounted or track-mounted concrete pumps, along with any additional placing equipment, should be adequately planned between the hirer and the owner. The delivery, loading/unloading and collection of trailer-mounted concrete pumps, or static or track-mounted units, placed onto or from a transporter should be adequately planned by the equipment owner. The principal contractor/hirer must ensure that relevant site information, including any hazards or time restrictions, is provided to the owner to assist with arranging delivery and collection.

Those responsible for the transporting and/or delivery of units on a trailer or transporter must be sufficiently trained in the correct securing procedures and types of attaching and/or securing accessories that should be used, along with knowledge of the Road Traffic Act requirements in relation to loading and unloading onto or near the public highway.

Information relating to the delivery of a unit need to be passed to the hirer by the owner prior to or on delivery. At the point of delivery and supported by appropriate signatures, the responsibility of any equipment passes to the hirer.

9.0 Arrival on Site and Setting Up the Machine

9.1 General

The concrete pump operator is responsible for the correct operation of the concrete pump in accordance with the manufacturer's instructions and within the hirer's safe system of work.

9.2 On Arrival

On arrival, the concrete pump operator should report to the relevant site office or designated reporting place.

9.3 Site Induction

The concrete pump operator needs to attend any site safety induction training as required by the site.

9.4 Authorised Access Routes

The concrete pump operator must use only authorised routes across the site and be marshalled accordingly.

NOTE: *It is the hirer's responsibility to assess the ground conditions and confirm its suitability to support the truck-mounted concrete pump. The concrete pump operator should use only authorised routes across the site as detailed in the site traffic management plan. Where possible, site routes should be taken to eliminate reversing. Where this is not possible, the hirer/contractor should have control measures in place for people/plant interface, such as the supply a plant/vehicle marshaller to assist with manoeuvring and reversing when necessary. The use of cameras/sensors and other visual aids should be considered as an aid to reducing the risk of collisions.*

9.5 Siting the Machine

The position of the machine must be determined by the hirer after discussion with the owner, bearing in mind the ground conditions, the distance to the concrete pour, suitable access for the concrete delivery lorries and the working position of the concrete pump operator. This requirement should be confirmed to the concrete pump operator on site during a pre-start briefing. Underground voids, e.g. new drainage trenches and inspection covers etc. need to be avoided or controlled when determining the positions of stabilisers.

9.6 Electrical Cables

Overhead cables must be taken into account when setting up the machine. The boom should never be positioned where it could contact overhead cables or where electricity might arc to the boom. A safe method of working in the vicinity of overhead cables must be included in the overall safe system of work.

NOTE: *Further guidance for safe distances is given in HSE Guidance Note GS6 - Avoidance of danger from overhead electric power lines.*

Ground cables used to power electrically-powered or battery energy units need appropriate routing and protection, and connected and examined by a competent person.

9.7 Proximity of Cranes and Other High Reach Equipment

Regard should be given to the proximity of nearby cranes, other concrete pump booms, boom-MEWPs etc, especially when working areas overlap.

9.8 Maximum Operating Wind Speed

The manufacturer of the machine specifies the maximum wind speed in which it is safe to operate a concrete placing boom. It is the responsibility of the hirer to verify that the wind speed at the site is not in-excess of the limit specified by the manufacturer.

9.9 Use of Stabilisers

9.9.1 Manufacturer's Instructions

All stabilisers (where fitted) must be fully deployed in accordance with the manufacturer's instructions. Where appropriate, sole-plates should be used under the stabiliser base plates to spread the loading from the machine.

9.9.2 Sole or Spreader Plates

All sole-plates must be of adequate strength and size to support and distribute the loads likely to be applied. They should be laid on level ground that makes full contact with the plate. If the ground is locally uneven, it will need to be prepared ready for the plates. Plates must not be levelled using bits of timber, bricks etc.

9.9.3 Responsibility for Ground Conditions

It is the responsibility of the site management to provide suitable hard standing for the machine to be set up for work and discharging purposes. The ground must be capable of adequately supporting the loads likely to be imposed on it. The Construction Industry Plant Safety Group's - Ground conditions for Construction Plant provides further information on ground conditions. Information on ground conditions can be sourced from the Temporary Works Forum (TWf), who publish information sheets and technical guidance material from which some material can be downloaded free of charge at: <https://www.twforum.org.uk/home>

NOTE: Plant Safety Group publications can be freely downloaded at: <https://cpa.uk.net/plant-safety-group/>

9.9.4 Stabiliser Loading Information

Information should be available on the maximum load (worst case scenario) likely to be applied to each stabiliser. This can vary for each machine type, for which reference will need to be made with manufacturers and suppliers. For example, as material is pumped through a boom, the loadings on the stabilisers will increase accordingly and therefore maximum loadings may apply.

If the machine is not level, the point loading through the corresponding stabiliser can increase, particularly as the load in the hopper increases. The manufacturer's information should indicate the maximum gradient for each operating condition. Where a substitute machine has been supplied compared to the original specification at the point of hire, amended point loadings will need to be supplied by the owner to the hirer.

9.10 Pre-use Checks

The function of all controls and safety devices should be checked by the concrete pump operator for correct working before pumping commences.

9.11 Guards

Guards to all dangerous moving machinery must be in place at all times while the machine is working.

9.12 Working at Height

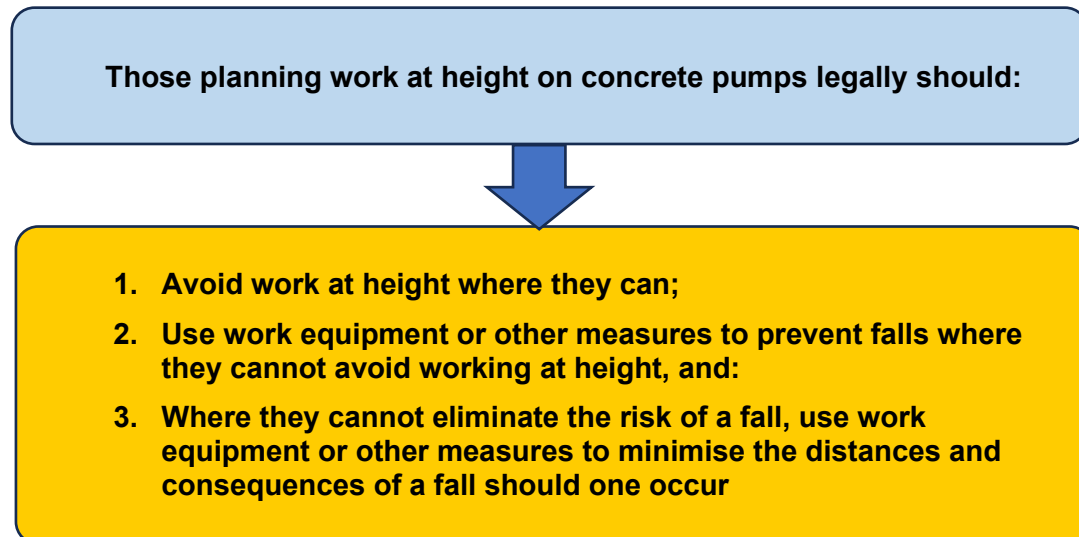
When considering the risk of working at height during the cleaning process, the hierarchy of control should be followed.

9.12.1 Hierarchy of Measures

- Avoid work at height wherever possible and actively seek solutions to facilitate this;
- If this is not possible, use 'collective' means of prevention such as guardrails;
- If this is not possible, use 'personal' means of prevention such as work restraint;

- If this is not possible, use 'collective' means of protection such as air-bags;
- If this is not possible, use a personal fall protection system such as a work positioning system or fall arrest system.

There needs to be particular attention to working at height when cleaning out the machine as described in Section 13.



9.12.2 Training

All persons working at height must be trained to ensure that they are competent to work at height and are able to use any equipment, such as personal fall protection systems, safely.

9.12.3 Selection of personal Fall Protection Equipment

Where a risk assessment indicates that a personal fall protection system is required, a working positioning system should always be used in preference to a fall arrest system. Where the use of fall arrest personal fall protection systems is unavoidable, there will be a risk of the wearer being left suspended following a fall and arrangements must be made to ensure that they can be rescued in a safe and timely manner.

Note: More information on the requirements of working at height can be found at:
<https://www.hse.gov.uk/work-at-height/index.htm>

9.13 **Pipelines**

Pipelines for conveying concrete from the pump to the pour position may be supplied and set up in a number of ways:

1. For basic single pours, where the distance from the pump to the pour point does not exceed 30m, the owner will send the pump, operator and standard pipeline equipment to site. The operator sets the pipeline up and, with assistance from site, carries out the pour and removes the equipment from site.
2. For basic single pours, where the distance from the pump to the pour point exceeds 30m, the owner will send the pump and operator to site with a second person (concrete pump assistant) and a vehicle containing the pipeline equipment. The operator and concrete pump assistant set the pipeline up and, with assistance from site, carry out the pour and remove the equipment from site.
3. For multiple pours, the pipeline is normally delivered to site and set up beforehand, remaining on site until the pours have been completed. The pipeline can either be set up by owner's personnel or the Hirer's personnel.

The concrete pump will then come to site with the operator and possibly a concrete pump assistant, to carry out each pour. It is essential that responsibility for the pipeline is agreed between the owner and hirer.

4. On large contracts, the hirer may choose to supply their own pipeline, which they will set up themselves and maintain. The owner will then send the pump to site as required whilst the Hirer takes full responsibility for the pipeline.

Whichever method of supply and set up is used, it is essential that the operation is planned effectively and that the installation is inspected by a competent person before being taken into use, to ensure that it is safe. This inspection should include checks that all couplings have been fitted with gaskets and safety pins and that flexible hoses have not been used in place of steel bends. It is important to remember that overall responsibility for the operation rests with the hirer, irrespective of who supplies and sets up the pipeline.

9.14 Placing Hose Security

The placing hose - which is a single end flexible pipe - should have safety straps fitted from boom tip to each additional pipe. This is to contain the placing hose or interconnecting hoses should inadvertent disconnection occur. See Figures 1 to 3. **Note: In figure 3, which is a double-ended delivery hose, it has not fitted with a reducer-flex safety strap.**



Figure 1

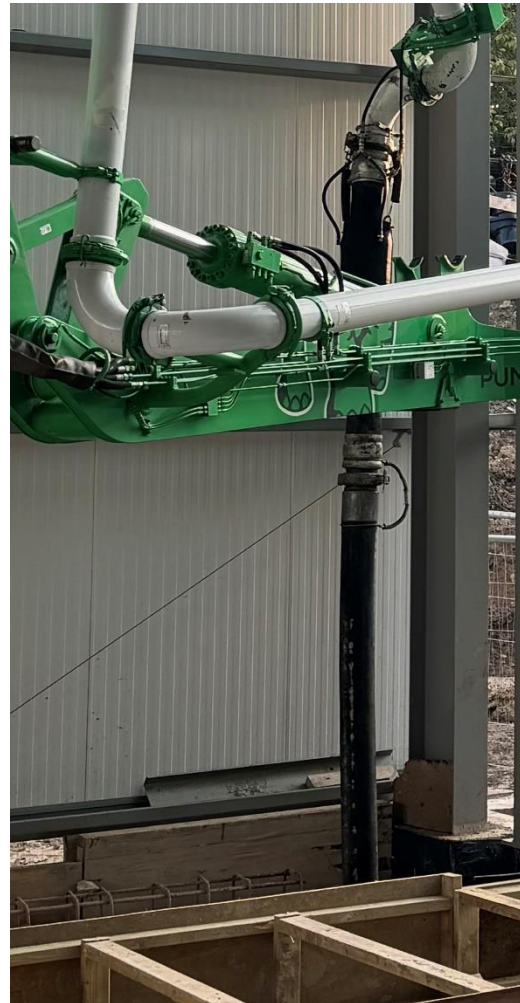


Figure 2



Figure 3

10.0 During the Pour

10.1 General

If, in the opinion of the concrete pump operator, there is a risk of injury to themselves or other persons, or damage to property or their machine - which could be caused by the operation of the pump or boom, the operation must cease immediately and consultation with the Hirer sought without delay.

10.2 Avoiding Overhead Power Lines

The boom must never be operated in a position where it might come into contact with live electricity cables or approach them to a point where the electricity arcs to the boom. The concrete pump operator must work to the safety clearance distances as instructed by the hirer before work commences. If the operator has any concerns regarding safe approach distances to overhead lines, they should contact their manager.

NOTE: Further guidance is given in HSE Guidance Note GS6 - Avoidance of danger from overhead electric power lines, particularly on distances that must be maintained.

10.3 Control of Noise

The combination of the noise levels from different items of plant may exceed the action levels in the Control of Noise at Work Regulations 2005. A risk assessment needs to be made to determine any exposure levels and where required, collective control measure need to be implemented or as a last resort, the provision of appropriate ear defenders to the concrete pump operator and others affected, along with instructions on the use of them in accordance with the Regulations.

10.4 Remote Controls

The availability of a remote-control box, whether operated by cable or by radio signals, allows the concrete pump operator to select the optimum position from which to operate the pump and boom. This position will vary according to the work in hand. The concrete pump operator should select the position that offers the safest overall position for the job.

When a remote-control box is in use, any other controls on the machine must be isolated or access to them by unauthorised personnel prevented.

10.5 Use of Signallers

10.5.1 Requirement for Signallers

If the concrete pump operator is required to position themselves where they cannot see the concrete placing gang, the hirer needs to supply a signaller to give appropriate signals to the concrete pump operator (see Annex 4).

10.5.2 Signal Code

A code of signals needs to be agreed between the concrete pump operator and a representative of the concrete placing gang before pumping starts (see Annex 4).

10.5.3 Concrete Level Monitor

When the concrete pump operator cannot see the concrete level in the machine's receiving hopper, it is the responsibility of the hirer to appoint a person who is competent to monitor the level of concrete in the receiving hopper, as well as conveying signals to the concrete pump operator, when the level is at its safe minimum. It is not acceptable to hold the driver of the ready-mixed concrete truck responsible for advising the concrete pump operator when the concrete level is low in the receiving hopper.

10.5.4 Responding to Signals

The concrete pump operator should at any one time, respond only to the signals from the appointed signaller, who should be clearly identified. The concrete pump operator must respond immediately to signals given by a signaller.

10.6 Personnel in the Vicinity of the Concrete Pump

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.

The placing/end hose should be single ended when placing concrete on the floor or from a boom.

10.7 Pipeline Blockages

Clearing pipeline blockages is a potentially hazardous task, as workable concrete has such a short life. This means that timing is vital and if a clear risk assessment and robust method statement, setting out roles and responsibilities is not in place, the risk of serious accidents may be increased.

All personnel dealing with the pipeline should be trained in dealing with blockages etc. Whilst the concrete pump operator may be the person on site with the most experience of clearing blockages, it is unreasonable to expect them to have control over a long pipeline. It is important to note that overall responsibility for the management of the operation rests with the hirer.

If the concrete pump operator needs to open the delivery pipeline to clear a blockage, they 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 hand and eye protection must be worn when opening the delivery pipeline.

The hirer/(sub)contractor should ensure that site personnel **DO NOT** under any circumstance, open or attempt to open the delivery pipeline under pressure.

Where a blockage has to be cleared, the following procedures need to be followed:

- Stop pumping immediately;
- Reverse the pump until the pressure is released (**DO NOT** increase the pressure to clear the blockage as an alternative to the following procedures);
- Locate area of blockage, check the following:
 - reducer (if applicable);
 - bends;
 - flexible rubber hoses;
 - outlet of pump.
- Establish an exclusion zone (move non-essential personnel out of the area)
- The procedures outlined in Section 11.9;
- Disconnect the delivery pipeline at the safest point near to the blockage;
- Clean out the blockage, re-prime and re-connect, ensuring that safety pins and clips are in place;
- Recommence pumping operation to ensure blockage is clear. If not, repeat the procedure as above.

NOTE: It is essential that the manufacturer's instructions or guidance on blockage clearing is followed in all situations.

The Federation of Piling Specialists (FPS) produces free of charge 'Quick Reference Guide- Managing Obstructions and Blockages in Concrete Lines' publication and can be downloaded at: <https://www.fps.org.uk/guidance/safety/#accordion6>

10.8 Concrete Placing Operative Training

The hirer/ (sub) contractor should ensure that members of the concrete-placing gang/ concrete pump assistant are adequately trained in the safe placing of concrete. In particular, they should be aware of the risks associated with the use of placement hoses such as hose whipping.

10.9 Use of PPE

All members of the concrete placing gang and concrete pump assistant should wear, as a minimum, a safety helmet, safety footwear, impervious gloves / gauntlets, suitable eye protection and high visibility clothing. (See Section 15)

NOTE: Concrete operatives often work in concrete, consequently all foot-wear should be impervious, clothes should be prevented from becoming contaminated with concrete and arrangements should be in place to ensure that any contaminated clothing is dealt with appropriately.

10.10 Exhaust Fumes

Arrangements must be made to extract exhaust fumes when the machine is operating inside a building or a confined space.

10.11 Leaving the Concrete Pump Unattended

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

10.12 Maximum Hose Length

The maximum length of end hose to be suspended from the end of a boom is specified by the manufacturer and must not be exceeded, as this may affect the strength and/or stability of the pump unit.

10.13 Falling Concrete

Concrete must be prevented from falling out of the delivery hose when the boom is being manoeuvred over personnel or property. Where necessary a Blanking Device, fitted in accordance with the manufacturer's instructions, should be used.

NOTE: In using such Blanking Devices, care must be taken to ensure that additional hazards are not introduced.

10.14 Use of Concrete Placing Boom as a Crane

The boom must **never** be used as a means of hoisting/lifting equipment.

10.15 Securing Pins

Purpose designed securing pins must be fitted to all pipe couplings to prevent them from opening accidentally. The tip hose should also be fitted with safety straps/chains to prevent the hose falling in the event of any pin failure.

10.16 Hopper Grill

The hopper grille must be in a closed position at all times during the pumping operation.

10.17 Movement of Truck-mounted Concrete Pumps on Site

10.7.1 Travelling Configuration

If the truck-mounted concrete pump has to be moved on site, the boom must always be folded to the travelling position. The only exception to this recommendation would be a procedure laid down by the machine manufacturer that allows otherwise.

Any procedure endorsed by the equipment manufacturer should be strictly adhered to as laid down in their operating instructions, as the risk of the machine turning over is greatly increased. However, the safest and accepted procedure is to return the boom to its folded travelling position whenever the machine is to be moved.

10.17.2 Site Traffic Management Arrangements

The concrete pump operator must comply with the site's traffic management arrangements.

It is the responsibility of the hirer to ensure that alterations in the site traffic management arrangements, necessitated by the presence of the mobile concrete pump and concrete-mixer lorries, are adequate and implemented.

10.18 Washing Out of Ready-mix Truck Chutes

Hirers should ensure that ready-mixed concrete trucks do not wash out their chutes into the receiving hopper of the concrete pump. This can cause damage to the pump unit and affect concrete quality. Washing out arrangements should be agreed between site management and ready-mix concrete suppliers.

11.0 Working with Pipelines

11.1 Resources

The hirer is responsible for providing adequate resources to assist the concrete pump operator in handling pipes and accessories.

11.2 Selection of Equipment

Pipes and couplings must be selected in accordance with the anticipated pressure in the pipeline.

NOTE: The maximum pressure generated by the pump will depend on the delivery situation and other factors. This should be the subject of discussion between the owner and hirer.

This should be the maximum aggregate size guidance for concrete placement through different diameter pipes:

Pipe Size	Aggregate size
5 inch / 125mm	20mm
4 inch / 100mm	20mm
3 inch / 75mm	10mm
2 inch / 50mm	4mm

11.3 Inspection

The concrete pump operator/hirer should carry out regular inspections of the standard delivery pipeline supplied with the machine, in accordance with a planned maintenance schedule, to ensure that they are fit for continued use. Recommendations for inspections are given in Annex 3.

NOTE: The inspection of additional pipeline, beyond the standard pipeline supplied with the machine, is the responsibility of the hirer.

11.4 Setup of pipelines

The setting up of all pipelines, not supported by the machine, should be under the direction and control of the hirer.

11.5 Pipeline Support

All pipelines must be adequately supported.

11.6 Couplings

All couplings must be in good order and correctly fitted with a good rubber seal and a securing pin. The bolts of bolted couplings must be capable of being tightened fully.

11.7 Pipelines Fitted to Scaffolding

11.7.1 Loadings and Attachment

Before a pipeline is fitted to a scaffold/falsework, the hirer must confirm that the scaffolding/falsework is designed and constructed to take the extra loading to be imposed. Purpose-made clips should be used to attach the pipeline to the scaffold/falsework.

11.7.2 Working Platforms

Working platforms, in compliance with the Work at Height Regulations 2005, should be provided for the purpose of attaching pipelines to scaffolding.

11.8 Protection of Delivery Lines

Where personnel and /or vehicles are required to pass over delivery lines, then suitable ramps should be provided.

11.9 Cleaning Delivery Lines Using Compressed Air

On occasions, it will not be feasible, practicable or even possible to clean out the delivery pipeline by the conventional method. Such situations may include exceptionally long pipelines, the use of fast-setting concrete, very hot weather when the concrete pump has broken down, etc. In all circumstances, concrete lines should be washed out using water as a priority and only in exceptional circumstances, in using compressed air.

The use of compressed air to clean out a pipeline however, should only be used where there is no practical alternative. The operation must be carried out under the close supervision of a suitably trained person.

- It is essential that personnel involved in the operation wear protective clothing, a safety helmet and eye protection, preferably a full-face visor of the suitable grade and bearing a CE or UKCA mark (see Section 15);
- The pump operator should establish effective communications with site personnel and should ensure that all personnel stand clear of the pipeline, particularly at the discharge end. It is a key requirement that all personnel are able to communicate clearly with appropriate means;
- All flexible hoses must be removed from the pipeline;

NOTE: This does not apply to CFA ground hoses used in piling operations.

- The pipeline must be fully supported and secure;
- There must not be any bends in the final 15 metres of the pipeline, unless the pipeline is adequately secured;
- A sponge rubber cleaning device/washout ball should be inserted into the pipeline at the end from which the pipeline is to be blown out;
- The washout adapter should be attached to the end of the pipeline using a coupling, rubber seal and securing pin. The air entry and emergency pressure release valves must be checked to ensure that they work correctly;
- A ball-catcher attachment must be fitted to the discharge end of the pipeline to catch the washout ball, which could otherwise be expelled with great force;
- The air line from the compressor should then be attached to the air entry control valve on the washout adapter;
- The compressed air should be introduced gradually, sufficient only to move the washout ball steadily along the pipeline;
- A competent assistant should follow the progress of the washout ball while the concrete pump operator controls the ingress of compressed air. By tapping the pipes with, for example a hammer, the assistant can establish which pipes have been emptied;

Warning - The assistant should stay away from the end of the delivery line.

- As the washout ball progresses and the resistance of the concrete decreases, the flow of air introduced into the pipeline should be reduced by the concrete pump operator;

Note: A way of achieving this is to shut off the flow of air altogether at a specified, given point dependant on pipeline size etc. and maintaining a controllable rate.

- Air must be exhausted via the emergency valve whenever the speed of the discharge of concrete becomes too rapid;
- The pipeline must be considered to be pressurised during the cleaning process and no couplings should be loosened or removed unless the pressure in the pipeline has been released - and that this has been confirmed by the concrete pump operator (see Section 11).

To clean delivery lines safely using compressed air, the following equipment is required:

- A wash out adapter, designed for the purpose and equipped with an air entry control valve and an emergency pressure release valve;
- Sponge washout balls;
- A ball-catcher attachment;
- A compressor not delivering more than 7 bar pressure.

11.10 Compressor Selection

When selecting a compressor to clear delivery lines, the working pressure should be established prior to use so that it is unable, or restricted to, a maximum operating output pressure of 7 bar.

Where the operating output pressure is adjustable on the compressor, it must be preset and locked or in any other way that prevents an unauthorised increase in the output pressure during the cleaning activity. The output pressure should be easily monitorable using a visual gauge or other form of reliable indication.

The length of the pipeline can determine the rated volume of a compressor, where long pipelines may require a higher volume-rated unit to maintain a constant and controllable pressure. However, over-specifying the rated volume required may not be more efficient.

Manufacturer's instructions need to be followed in terms of positioning, securing, attaching of the air hosing, pre-start checks and running checks by training and authorised personnel.

12.0 Pumping Special Types of Concrete

12.1 General

Many forms of concrete exist beyond the standard mixes that can be pumped. Each should be considered as a special case. The nature of the concrete can have serious consequences for the concrete placing boom and for the concrete pump operator. Manufacturer's guidelines need to be followed when pumping specialist types, such as heavyweight concrete.

12.2 Effects of Additives

The effects of chemicals added to the concrete must be considered by the hirer and the concrete supplier, both in terms of health effects and the effects on the pump ability of the concrete mix. Information on the additive, which is relevant to health and safety, must be given to the client by the supplier.

12.3 COSHH Assessments

The hirer should assess the risks to the health of the concrete pump operator and give them information and advice on the risks and the protective measures necessary. This is a requirement of the Control of Substances Hazardous to Health (COSHH) Regulations.

12.4 Concrete Density

The density of special concretes should be considered, especially when pumping through a boom. Heavyweight concrete can contain heavy, natural aggregates such as barites, magnetite or manufactured aggregates, such as iron or lead shot. When being pumped, the concrete pump boom manufacturer's recommendations must be considered.

12.5 Foamed and Air-entrained Concrete

Foamed concrete and air-entrained concrete can be compressed in the pipeline, particularly if there is a blockage or partial blockage. It is essential that all pressure is dissipated from the pipeline before it is opened.

13.0 Cleaning out the Machine

13.1 General

Cleaning out a concrete pump and the concrete placing boom is a specialist operation, which is to be left to the concrete pump operator. If the concrete pump operator requires assistance when cleaning out the delivery line, this needs to be carried out under supervision.

13.2 Water Supply

Truck-mounted concrete pumps generally carry their own supply of water for cleaning the boom pipes and hopper. However, in cases of more than one pour, it may be necessary for the site to provide a water supply. Trailer or skid-mounted concrete pumps need a separate water supply or bowser.

13.3 Designated Washout Areas

The cleaning process involves the deposit of some waste concrete on the site. The concrete pump must only be washed out in the area designated by the hirer. As per the CPA concrete pumping supplementary terms and conditions, the hirer should provide the required facilities, without charge, to the pump owner for such times as is reasonably required during the hire period. This will include an adequate piped water supply and washout position, temporary lighting when required, facilities for washing out the pump and adequate assistance in cleaning any spillage.

The hirer is further responsible for the removal of concrete and waste cementitious water. This must be done in compliance with all current environmental legislation and guidance. Disposal of cementitious water to be undertaken in an environmental-friendly method. The hirer should maintain records demonstrating compliance for the period required by legislation and make them available to the Environment Agency upon request. Concrete waste and washout should never be removed from site by the concrete pump itself.

13.4 Good Management Practice Objectives

The good management practice objectives for concrete washout are to:

- Collect and retain all the concrete washout water and solids in leak proof containers, so that this caustic material does not reach the soil surface and then migrate to surface waters or into the ground water and;
- Recycle 100 percent of the collected concrete washout water and solids;
- Ensure that all site personnel are trained in the correct concrete washout procedures;
- Ensure that the site/projects resource management plan includes procedures for managing construction waste including concrete wash out.

13.5 Accessing Internal Areas of Hopper

When carrying out cleaning operations, there should be no working inside the receiving hopper except for example, needing to open the hopper grill for access. This needs to be risk assessed prior to any activity.

Working at height requirements need to be actioned where the pump or pump components require washing out. It should be hirer's responsibility to provide appropriate and safe platforms if work, cleaning or maintenance cannot be undertaken at ground level.

13.6 Piling Rigs

Where pumps have been used to supply augers and other piling equipment to form piles, additional cleaning out activities may need to be undertaken. More information on appropriate procedures can be found at: <https://www.fps.org.uk/guidance/plant-guidance/#accordion3>

14.0 Leaving the Site (Truck-mounted Pumps)

14.1 Stowing

Before leaving the site, the concrete pump operator must ensure that the concrete placing boom is properly stowed and that all equipment is securely loaded.

14.2 Emptying the Receiving Hopper

Concrete should not be carried in the receiving hopper on the public highway.

14.3 Checking of Tyres

The vehicle tyres, as a legal requirement, must be checked for condition including damage, cuts, nails or screws in the tread and material trapped between any twin wheels etc.



15.0 Personal Protective Equipment

15.1 General

The concrete pump operator is likely to be exposed to a variety of working conditions, with the majority of these unable to be avoided. The Personal Protective Equipment (Enforcement) Regulations 2018 need to be complied with, with suitable PPE being supplied by the employer and conforming to the appropriate British Standard that has to be issued to the concrete pump operator.

15.2 Appropriate PPE

The personal protective equipment worn by the concrete pump operator may include:

- Safety helmet;
- Safety footwear;
- Overalls;
- Eye protection;
- Ear defenders;
- Fall protection equipment;
- High visibility clothing conforming to BS EN 471 and be either and/or CE marked and UKCA marked and instructions for use in English;
- Impervious gloves or gauntlets;
- Waterproof clothing.

15.3 Charging for PPE

Concrete pump operators cannot, as deemed by the regulations, be charged for the issue of PPE.

15.4 PPE Replacement

PPE should be replaced by the employer as necessary.

15.5 Additional PPE

Other PPE should be supplied when a risk assessment deems this necessary.

16.0 Concrete Pump Inspection and Testing

16.1 Regulatory Requirements

A concrete placing boom is not an item of lifting equipment as defined in the *Lifting Operations and Lifting Equipment Regulations 1998* [LOLER]. The *Provision and Use of Work Equipment Regulations 1998* (PUWER) require that work equipment (including concrete pumps) is inspected at regular intervals and in conjunction with the machine and chassis manufacturer's instructions. (See Annex 2)

16.2 EC Declaration of Conformity/UKCA marking

An EC Declaration of Conformity must be issued by the manufacturer for each new concrete pump supplied. A copy of this declaration and, where appropriate, a copy of the machine's inspection certificate, must be made available for viewing on the machine. UKCA Marking conformity assessment and documentation may be accepted on certain products that meet the UKCA marking requirements.

16.3 Inspection

In accordance with the *Provision and Use of Work Equipment Regulations 1998*, concrete placing boom must be inspected *"at suitable intervals to ensure that health and safety conditions are maintained and that any deterioration can be detected and remedied in good time"*. (add in further content from PUWER reg 6)

Note: Pipeline thickness should be checked in the inspection programme to reduce risk of pipes bursting, with records kept accordingly.

16.4 Inspection Frequency

A concrete pump should be inspected:

- That is determined by the competent person, based on operational conditions and manufacturer's recommendations etc;
- at least once a year by a competent person, who has the necessary knowledge and experience to carry out that duty.

The manufacturer of the concrete pump, or the competent person appointed to inspect it, may specify a more frequent inspection period because of the machine's age, condition or operating conditions etc.

16.5 Inspection Certificates

A certificate of inspection should be issued by the competent person following each inspection. A copy should be made available for viewing on the machine. These may be stored in any way appropriate to the owner of the machine, i.e. in paper format, electronically etc. Annex 6 gives details of the information which the certificate should contain.

16.6 Safe Working Load

The safe working load of the machine, i.e. the maximum length of delivery hose full of concrete to be suspended from the concrete placing boom, should be clearly marked on the machine and shown on the inspection certificates. Any other conditions e.g. the deployment of stabilisers, should be noted on the certificate.

The pumping of special heavy concrete mixes may add additional weight that bears onto the machine and ground and will need to be taken into account, so that safe working loads are not exceeded (see Section 9).

16.7 Retention of Inspection Records

Following an inspection in line with Annex B of BS EN 12001:2003+A1:2009 the record should be retained for a period of at least three years to prove a regular inspection regime.

16.7.1 Weekly and Maintenance Inspections

Inspections should be completed by the concrete pump operator on a weekly basis at least, and by maintenance staff carrying out routine services. A written record of the inspections should be retained and be available at all times for examination. An example of a daily and weekly checks and inspections record is given in Annex 7.

16.8 Sale of Used Equipment

If a used concrete placing boom is sold, the current certificate of inspection and its EC declaration of conformity or UKCA marking (where applicable) should be supplied to the buyer.

17.0 Maintenance

17.1 General

As with all machinery, good maintenance of a concrete pump is paramount to safety. Road safety and on-site safety have both to be considered when planning a maintenance system. A good defect reporting and repair system is also vital. Further guidance on maintaining roadworthiness can be found from the Driver and Vehicle Standards Services Agency (DVSA).

17.2 Maintenance Inspections

The concrete pump owner should carry out regular inspections of the concrete pump and host vehicle to ensure that they are fit for use. Maintenance and inspection schedules should correspond to those required by the Driver and Vehicle Standards Services Agency (DVSA) and detailed in their *Guide to Maintaining Roadworthiness*. -

<https://www.gov.uk/government/publications/guide-to-maintaining-roadworthiness>

Road-going pump chassis must have a maximum 8 weekly(*check*) (or more frequent) safety inspections as per the guidelines used for maintaining roadworthiness, endorsed by the Traffic Commissioner.

17.3 Defects Reporting and Recording

Any defect that, in the opinion of the concrete pump operator, would affect the safe operation of the concrete placing boom and its supporting structure and vehicle, should be recorded on the daily and weekly maintenance checklist and handed or forwarded to the owner in accordance with operational requirements.

Note: *Any defects affecting vehicle safety in respect of Road Traffic Act requirements have to be reported immediately to the owner.*

17.4 Minor Defects

Defects of a minor, non-safety related nature should be recorded on the daily and weekly maintenance checklist. They should be recorded weekly until the defects have been repaired. The operator may need to engage with the owner to establish what constitutes a minor defect and any resultant actions.

17.5 Preventive Maintenance

A programme of servicing the vehicle, the concrete placing boom and its supporting structure and the concrete pump should be devised as a part of a preventative maintenance system. The period between services may be determined by the manufacturer or the owner of the machine and may be based on mileage, the number of hours worked or a period of time.

17.6 Testing of Vehicle Brakes

The braking system should be serviced and tested in accordance with the DVSA Guide to Maintaining Roadworthiness.

17.7 Retention of Maintenance Records

Maintenance and service records should be retained for at least three years to prove a regime of regular maintenance.

It is very helpful to retain inspection records for the whole life of the machine, as this will enable the effectiveness of maintenance to be evaluated and failure trends established.

Setting up a machine history file for all machine related records will ensure that all information covering the purchase, use, maintenance and inspection of the machine are available in one place and can be easily accessed.

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Annex 1 – Concrete Pump Hire Checklist

1	Date of Hire	
2	Name of Contractor	
3	Site Address	
4	Size of Boom Required	
5	Site Visit Required	
6	Site Contact Name	
7	Site Telephone Number	
8	Concrete Supplier and Mix Details	
9	Concrete Supplier & Telephone Number	
10	Time Required on Site	
11	m ³ of Concrete to be Pumped	
12	Special Requirements:- ▪ Concrete pump assistant ▪ Extra Pipes/Compressor/Water Supply ▪ Spark Arrester ▪ Cash Sale ▪ Steel Fibre Concrete	
13	Provisional or Confirmed Booking	
14	Overhead Power Cables	
15	Order Number	
16	Washout Area	
17	Correct quantity of Cement or a Primer for Grout	
18	Adequate Insurance Cover	
19	Ground Condition Assessment	
20	Name of Competent Person compiling the Risk Assessment and Method Statement	

Annex 2 - Annual Testing (MOT) requirements

1. Heavy vehicles constructed on or adapted from an HGV-based chassis are subject under the Goods Vehicles (Plating and Testing) Regulations 1988 to require plating and testing and can encompass mobile concrete pumps.
2. Equipment on a bespoke chassis which come under the Special Types Goods Order (STGO) Regulations remain exempt from the annual MOT test.
3. It appears that there are no specific exemptions for vehicle-mounted concrete pumps and other such vehicles. However, it is possible that they meet the definition of plant/engineering plant under the Road Vehicles (Construction and Use) Regulations 1986 as follows:

Engineering plant is defined in regulation 3 (2) of the C&U regulations as:

“(a) movable plant or equipment being a motor vehicle or trailer specially designed and constructed for the special purposes of engineering operations, and which cannot, owing to the requirements of those purposes, comply with all the requirements of these regulations and which is not constructed primarily to carry a load other than a load being either excavated materials raised from the ground by apparatus on the motor vehicle or trailer or materials which the vehicle or trailer is specially designed to treat while carried thereon; or

(b) a mobile crane which does not comply in all respects with the requirements of these regulations.”

There are derogations from the regulations for vehicles considered to be engineering plant. However, it should be noted that there are no derogations from Regulations 7 (length), 8 (width) or 75 to 80 (axle and gross weights).

There are no testing exemptions for plant and engineering plant unless the vehicle is:

- based on a bespoke (non-HGV) chassis; or
- operating under the STGO.

These two caveats will apply consistently across all exemptions that have been removed.

4. Equipment that operates above normal weights authorised via the STGO criteria are exempt. Any that operate within standard limits and on a truck-based chassis is likely to be subject to testing.

5. For exempted vehicles, there is still a need to ensure that the host vehicle or unit remains roadworthy. The CPA Crane Interest Group have produced a Guide to Maintaining Roadworthiness of Mobile Cranes and is based on the DVSA's Guide to Maintaining Roadworthiness publication and the DSA's Heavy Goods Vehicle Manual. Each can be downloaded free of charge from:

<https://www.cpa.uk.net/safety-and-technical-publications/mobile-and-crawler-crane-guidance>

<https://www.gov.uk/government/publications/guide-to-maintaining-roadworthiness>

<https://www.gov.uk/government/publications/hgv-inspection-manual>

Annex 3 – Inspection of Delivery Lines

Steel delivery lines

1. Steel delivery pipelines may be either single wall or double wall. Double wall thickness pipeline consists of an outer layer which provides the necessary strength for pressure containment, and an inner layer of increased hardness which provides improved resistance to wear. Both types should be checked for damage and deformation.
2. In the case of single wall lines, the wall thickness of the pipeline may be checked using an ultrasonic gauge or similar non-destructive technique. Pipelines should be rejected if the thickness falls below the manufacturer's recommended minimum thickness.
3. In the case of double wall pipeline, ultrasonic gauges do not normally provide an accurate measurement of wear, and the pipeline has to be broken down into its individual lengths and the thickness measured from the ends using suitable metrology equipment. The thickness should be compared with the manufacturer's recommended minimum thickness and rejected if it falls below it.

Note: *The maximum wear in a pipeline normally occurs within the first 300 mm of either end of the pipeline due to turbulence of the concrete following the joint. Figure A3.1 shows a maintenance card on pipeline wall thickness versus pressure for a range of pipe diameters.*

Bends

4. Pipeline bends cannot easily be checked for wear using measurement techniques. Wear can be estimated by comparing the weight of a used bend with that of a new bend of similar size.

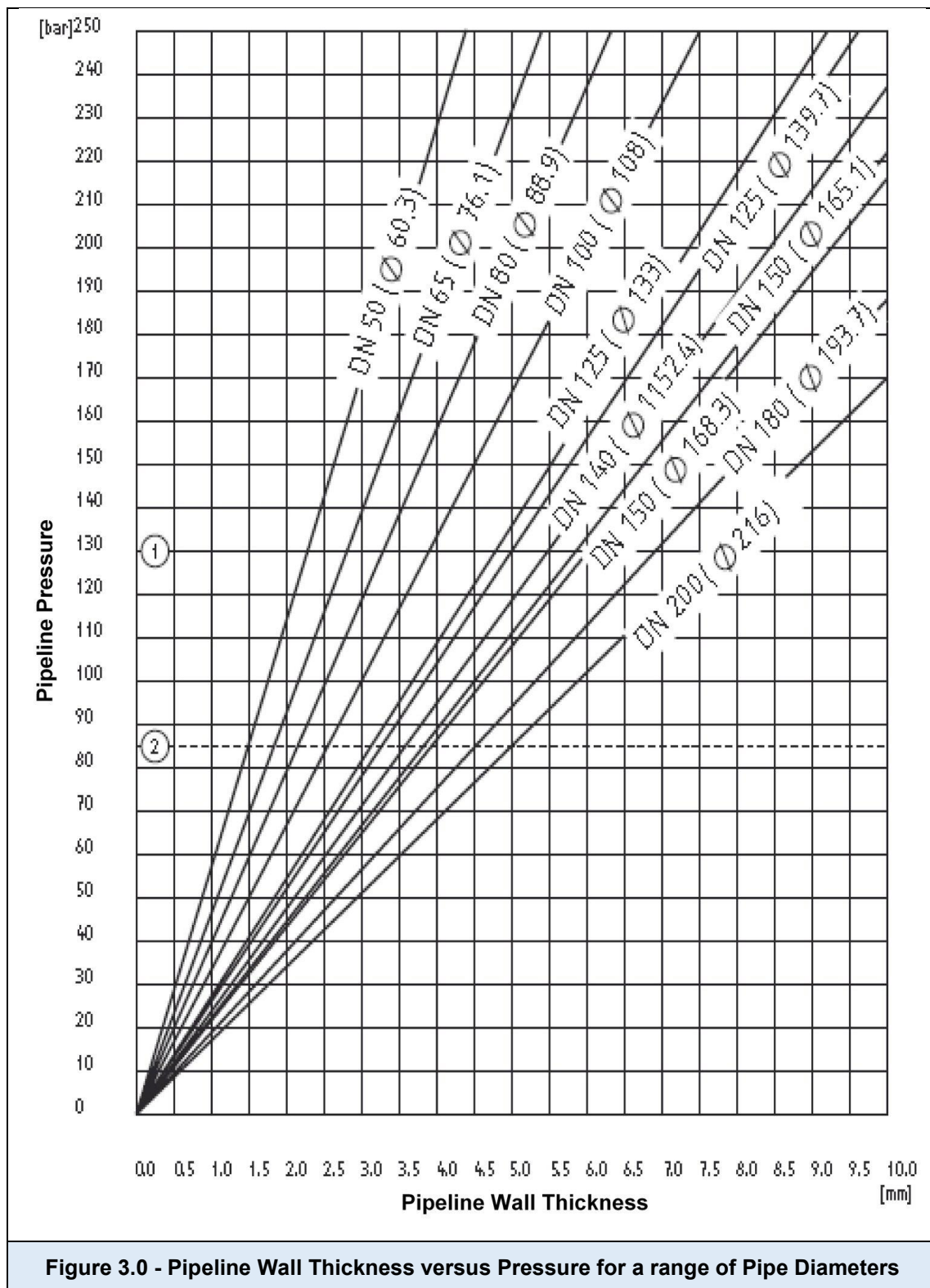
Flexible pipelines

5. Flexible pipelines should be inspected visually inside and out. If any steel reinforcement wires are visible; the pipeline should be immediately replaced.

Note: *Failure of flexible pipeline is often as a result of the pipeline being forced into too tight a radius.*

Pipeline Wear

6. Pipeline thickness should be checked in the inspection to reduce risk of pipes bursting, with records kept.



Annex 4 - Recommended Hand Signals

The following hand signals are recommended within the Health and Safety (Safety, Signs and Signals) Regulations 1996.

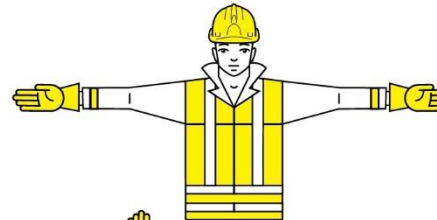
A General signals

START

Attention

Start of command

Both arms are extended horizontally with the palms facing forwards.



STOP

Interruption

End of movement

The right arm points upwards with the palm facing forwards.



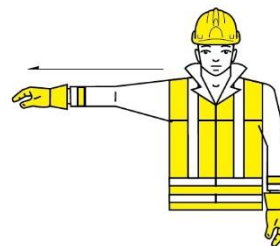
END of the operation

Both hands are clasped at chest height.



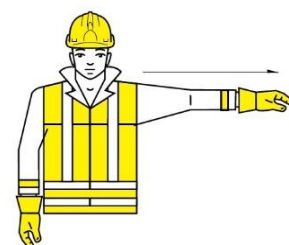
RIGHT to the signalman

The right arm is extended more or less horizontally with the palm facing downwards and slowly makes small movements to the right.



LEFT to the signalman

The left arm is extended more or less horizontally with the palm facing downwards and slowly makes small movements to the left.



HORIZONTAL DISTANCE

The hands indicate the relevant distance.



B Vertical movements

RAISE

The right arm points upwards with the palm facing forward and slowly makes a circle.



LOWER

The right arm points downwards with the palm facing inwards and slowly makes a circle.



VERTICAL DISTANCE

The hands indicate the relevant distance.



C Horizontal movements

MOVE FORWARDS

Both arms are bent with the palms facing upwards and the forearms make slow movements towards the body.

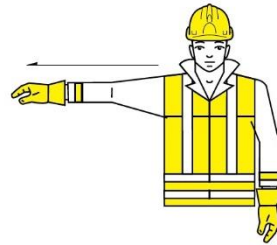


MOVE BACKWARDS

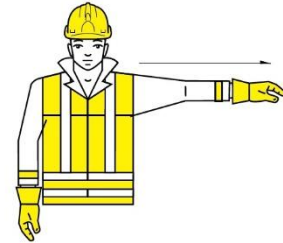
Both arms are bent with the palms facing downwards and the forearms make slow movements away from the body.



RIGHT to the signalman The right arm is extended more or less horizontally with the palm facing downwards and slowly makes small movements to the right.



LEFT to the signalman The left arm is extended more or less horizontally with the palm facing downwards and slowly makes small movements to the left.



HORIZONTAL DISTANCE The hands indicate the relevant distance.



D Danger

DANGER Both arms point upwards with the palms facing forwards.
Emergency stop

QUICK All movements faster.

SLOW All movements slower.



Annex 5 – Training, Competency and Certification Schemes

Assessment of Training Needs

1. As part of personnel selection, an assessment should be made of the extent of training which is needed for an individual, bearing in mind that this could be influenced by any previous training and experience. When supervisors or operators are recruited, it is essential that employers check that their skills and experience relate to the job they are to do. Where the type of concrete pump to be used is outside the employee's skill set or previous experience, additional training must be provided. In any event, some further job specific training is likely to be necessary.

Training

2. Any gaps in the knowledge, skills and understanding required for the tasks must be remedied by suitable and sufficient training. This may be carried out in-house or by an external training provider. At the end of the training period, the trainee must be assessed to ensure that the learning objectives have been met.

3. Training courses offered by training providers and certification bodies should be checked to ensure that concrete pumps forms part of the training and assessment process. When specifying training for their employees, the employer must ensure that the training programme confirms that operator is assessed as competent at the end of the training period.

4. Selected training providers and trainers must be able to demonstrate that they have appropriate expertise of using concrete pumps. Learning programmes, whether employer or training body delivered, should be based on skill standards set by the requisite industry standard-setting body, and any training should include appropriate knowledge of signalling techniques and methods.

Assessment

5. Employers should ensure that personnel are assessed against industry-devised occupational standards to establish that they are competent to carry out the tasks they are required to undertake. This applies equally to personnel recently completing training and experienced workers who have been recently recruited.

6. Assessment should contain both practical activities to demonstrate the skills and standards achieved and the answering of questions to demonstrate relevant underpinning knowledge. The assessment should be carried out by occupationally competent and authorised assessors.

Applying Learnt Skills in the Workplace

7. On the majority of operator training programmes, for safety reasons, candidates may not operate the machine at its full potential in terms of pumping on complex operations. Consequently, employers should ensure that newly trained operators are limited to activities and/or working areas encountered within the training programme until they become confident in operating to the parameters experienced within training. When being required to carry out pumping operations in the workplace, appropriate supervision must be applied to ensure the operator can safely carry out the task.

8. Employers and supervisors should be aware of skills attained during the training course and provide further specific training as required. Manufacturers and importers of concrete pumps, as well as external specialist training providers, who offer concrete pump training, can be approached for advice on relevant training requirements.

9. Employers and supervisors should for newly qualified operators:

- Specify any particular work requirements to nominated training providers prior to the commencement of training;
- Establish the type and the content of training and/or assessment programmes undertaken by the operator;

- Identify differences in learnt skills and work site activities utilising training body learning outcomes and/or training material;
- Initially limit the operator to activities and/or working areas measured by the end assessment;
- Provide time for the operator to study the machine's operating notes/handbook and other related data;
- Provide time and facilities for the operator to practice with a new machine type;
- Monitor work undertaken to gauge operator confidence and ability;
- Introduce new activities and/or working areas under supervision, especially if working within hazardous or busy areas;
- Carry out periodic assessments and ascertain when new or high-risk activities can be undertaken safely;
- Provide specific additional training for specific types of attachment.

Familiarisation

10. Concrete pumps, accessories and attachments come in a variety of types, sizes and differences in operating controls, methods and characteristics. It is therefore essential that operators and supervisors are given adequate familiarisation on an unfamiliar type or model of pumps and/or attachments and accessories before they begin operations. **The employer of the concrete pump operator is responsible for ensuring that familiarisation is provided.**

11. Familiarisation may be carried out by:

- an experienced person employed by the concrete pump owner or;
- a representative of the concrete pump or attachment manufacturer or supplier or;
- any other competent, experienced and authorised person*.

NOTE: **This could be the operator of the machine*

12. The person giving familiarisation should have been authorised by a suitable person in a supervisory position, after checking that they are competent to do so. All familiarisation activities should be recorded by both the operator and their employer.

Competency

13. Competency is defined holistically in having attained the relevant skills, knowledge, experience and behaviours that are relevant to the machine type and the sector or sectors that the operative will work in.

14. The duty to ensure that plant operators are competent rests with their employer and the process of ensuring competence requires cooperation between employers, training providers and operators, all of whom have a significant part to play in the process. Many organisations see training as a proxy for competence; this is not the case.

15. It may indicate a general level of ability to operate plant but does not take into account the difficulty of the task or complexity of environment or experience of the operator. These all have a bearing on the successful management of the task.

16. The route to ensuring that an operator is competent to perform a task begins with assessment of the individual. An appropriate level of maturity and responsibility must be present within the candidate before they can even be considered as suitable for the task. This assessment is followed by a period of initial training where familiarisation with the operation of the machine and the working environment are built up- under supervision; the greater the experience, the less reliance on supervision. At the end of this basic training, a test of the practical and theoretical knowledge should be taken and passed.

17. After this initial training period, the normal route (although not the only route), is to sign on for an NVQ or vocational qualification. This should be a period of development where the operator gains skills and experience 'on the job' and is presented as evidence of growing competence in a portfolio for the gaining of an NVQ. Non NVQ routes should use the National Occupational Standards (NOS) as a framework to demonstrate an equivalent level of experience.

18. It is reasonable to assume that the operator can be responsible for the safe use of their work equipment with minimal supervision. However, as the degree of difficulty of tasks increase with time, so a commitment to on-going development is necessary. This should be recorded within a log book or equivalent as evidence of being able to undertake more complex tasks.

Certification Schemes

19. Any plant operator-based certification or carding should bear the CSCS Logo and issued by a CSCS-alliance card scheme member. This indicates that it is in compliance with the Construction Leadership Council's card scheme criteria for the construction sector and mandates the attainment of the relevant NVQ or approved competence based process.

Further guidance

20. Further information on training and competence is detailed within the *Construction Industry Plant Safety Group's Best Practice Guide on Competence for Plant Operators*, available free of charge from <https://www.cpa.uk.net/safety-and-technical-publications/plant-safety-group>

21. The Plant Sector Representative Organisations Plant Operations (PSRO) has published a Competency Framework detailing the processes for ensuring competency for both certification bodies and employers and which can be downloaded free of charge at www.psro.org.uk

Annex 6 – Information to be Contained in an Inspection Certificate

The following details the information to be given in an inspection certificate following the inspection of a concrete pump in accordance with the Provision and Use of Work Equipment Regulations 1998:

- 1) The name and address of the employer for whom the inspection was carried out;
- 2) The address of the premises at which the inspection was carried out;
- 3) Particulars sufficient to identify the equipment including where known its date of manufacture;
- 4) The date of the last inspection;
- 5) The safe working load of the concrete pump;
- 6) In relation to every inspection of a concrete pump:
 - a) identification of any part found to have a defect which is or could become a danger to persons, and a description of the defect;
 - b) particulars of any repair, renewal or alteration required to remedy a defect found to be a danger to persons;
 - c) in the case of a defect which is not yet but could become a danger to persons –
 - i) the time by which it could become such a danger;
 - ii) particulars of any repair, renewal or alteration required to remedy it;
 - d) the latest date by which the next inspection must be carried out;
- 7) Where the inspection included testing, particulars of any test;
- 8) The date of the inspection;
- 9) The name, address and qualifications of the person completing the certificate; that he is self-employed or, if employed, the name and address of his employer;
- 10) The name and address of a person signing or authenticating the report on behalf of its author;
- 11) The date of the certificate.

Annex 7 - Example of Daily and Weekly Checks and Inspections

Vehicle Details

Vehicle Reg/Fleet No	Mileage	Hours	Date of report

From the Driver's Seat Checks

Item	Confirmed	Item	Confirmed
Mirrors/Glass		Fire extinguisher	
Horn/Warning light		Dash warning lights	
Steering (Operation of)		Fresnel lens	
Tachograph/Speedometer operation		Warning triangle	
Seat belts operational		No smoking sign	
Brakes		4-way camera	
Exhaust smoke/emissions		Beacons F/R/Roof	
Wipers/Washers		Spill kit - present and correct	
Height indication sticker		Cameras - <i>Forward facing / 360 / Fresnal lenses including SD Card / Access to hardware</i>	
Dash gauges		DVS Nearside and Offside monitors	
Drugs / alcohol sign		Other:	
Spare bulb kit		Other:	
Reversing alarm		Other:	
Turning alarm		Other:	
Highway board		Other:	

Front of Vehicle Checks

Item	Confirmed	Item	Confirmed
Lights/Indicators		Brake fluid - level check	
Number plate		Screen wash level	
Water / Fuel / Oil Leaks		Drain air tanks	
Engine oil		Other:	
Engine water		Other:	

Offside Checks

Item	Confirmed	Item	Confirmed
All Fuel - cap in place/no leaks		Number plate	
Tyres/Wheel fixings O/S (Front)		Body security (inc load)	
No new damage to bodywork (Front)		Side sensors	
Spray suppression		Under-run bars	
Reflectors		Chevron markers	
Rear lights		DVS sensors	
Rear and side warning markers visible		Other:	
Tyres/Wheel fixings O/S (Rear)		Other:	
No new damage to bodywork (Rear)		Other:	

Nearside Checks

Item	Confirmed	Item	Confirmed
Tyres/Wheel fixings N/S (Front)		Body security (inc Load)	
No new damage to bodywork (Front)		Cyclist signage	
Reflectors		Under-run bars	
Spray suppression		Chevron markers	
Tyres/Wheel fixings N/S (Rear)		DVS Sensors	
No new damage to bodywork (Rear)		Other:	
Adblue tank		Other:	
Rear and side warning markers visible		Other:	
Pedestrian signage		Other:	

Pump Checks

Item	Confirmed	Item	Confirmed
Hydraulic oil level		Lubricator valve	
PTO		Hydraulic oil filters	
Hopper grill and lock fully functional		Pump pressures	
Radio remote		Lubricate all grease points	
Pipes and accessories		Visually check pipes	
Outriggers and booms		Jet wash	
Boom certification		Water pump	
Water box and level		Other:	
Water box grill guard		Other:	

Defects and Observations *(All defects must be reported and the pump and vehicle not used until organisational authorisation to proceed has been obtained)*

Repairs Completed/Authorisation to Proceed

Name:

Position:

Date

Checks Completed by:

Name:

Position:

Date

Annex 8 - Bibliography

Legislation

Health & Safety at Work etc Act 1974.

Management of Health & Safety at Work Regulations 1999

Workplace (Health, Safety & Welfare) Regulations 1992

Provision & Use of Work Equipment Regulations 1998

L22 Safe use of work equipment, HSE Books.

Personal Protective Equipment at Work Regulations 2018

Work at Height Regulations 2007

Supply of Machinery (Safety) Regulations 2011

The Construction (Design and Management) Regulations 2015

The Control of Substances Hazardous to Health Regulations 2002

The Control of Noise at Work Regulations 2005

The Working Time Regulations 1998

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013.

The Road Traffic Act

The Road Vehicles (Construction and Use) Regulations 1986/SI1078 (as amended)

Standards

BS 8476:2007, *Code of Practice for the safe use of concrete pumps.*

BS EN 471:2003+A1:2007, *High-visibility warning clothing for professional use – Test methods and requirements.*

BS EN 12001:2012, *Conveying, spraying and placing machines for concrete and mortar – Safety requirements.*

BS EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction.*

PD 5304:2005, *Guidance on safe use of machinery.*

Other Publications

HSE Guidance Note GS6 - *Avoidance of danger from overhead electric power lines.*

Guide to Maintaining Roadworthiness - Commercial goods and passenger carrying vehicles, Revised October 2024; Driver and Vehicle Standards Agency (DVSA)

Useful Websites

Construction Plant-hire Association	www.cpa.uk.net
CITB	www.citb.co.uk
Health and Safety Executive	www.hse.gov.uk
Lifting Equipment Engineers Association	www.leea.co.uk
Safety Assessment Federation	www.safed.co.uk
Build UK	www.builduk.org/
Driver and Vehicle Services Agency (DVSA)	https://www.gov.uk/government/organisations/driver-and-vehicle-standards-agency

Annex 9 – Working Group Membership

First Edition Group 2004

B Murphy - <i>Chairman</i>	Camfaud Concrete Pumps Ltd
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P Deboo	Pochin Concrete Pumping Ltd
J Hallows	CITB
P Kimberlin	Putzmeister Ltd
M Lewis	CPS Concrete Pumping
J Moutrie	Health and Safety Executive
M O'Connor	Health and Safety Executive
B Reilly	Reilly Concrete Pumping Ltd
D Shepherd	Premier Concrete Pumping Ltd
H Steele	Construction Plant-hire Association
T P Watson - <i>Editor</i>	Construction Plant-hire Association

2025 Revision

B Murphy - <i>Chairman</i>	Camfaud Concrete Pumps Ltd
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