

BRITISH STANDARD

Code of practice for the safe use of concrete pumps

ICS 91.220



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Foreword

Publishing information

This British Standard was published by BSI and came into effect on 1 May 2007. It was prepared by Subcommittee B/513/-/8, *Concrete plant*, under the authority of Technical Committee B/513, *Construction equipment and plant and siting*. A list of organizations represented on this committee can be obtained on request to its secretary.

Use of this document

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

It should be noted that this code of practice provides the minimum standards necessary for the operation of all types of concrete pumping equipment in addition to any other guidance and legislation that might be appropriate.

Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

The word “should” is used to express recommendations of this standard. The word “may” is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the clause. The word “can” is used to express possibility, e.g. a consequence of an action or an event.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

In particular, attention is drawn to the following statutory regulations:

The Health and Safety at Work etc. Act 1974 [1]

The Control of Noise at Work Regulations 2005 [2]

The Control of Substances Hazardous to Health Regulations 2002 [3]

The Lifting Operations and Lifting Equipment Regulations 1998 [4]

The Provision and Use of Work Equipment Regulations 1998 [5]

The Road Traffic Act 1991 [6]

The Construction (Safety, Health and Welfare) Regulations 1996 [7]

The Management of Health and Safety Regulations 1999 [8]

The Manual Handling Operations Regulations 1992 [9]

The Control of Vibration at Work Regulations 2005 [10]

The Work at Height Regulations 2005 [11]

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 [12]

1 Scope

1.1 This British Standard gives recommendations for the safe use of concrete pumping and placing equipment.

1.2 This British Standard is not applicable to plaster and screed pumps. It is not applicable to the construction of the machinery, which is covered by BS EN 12001.

2 Terms and definitions

For the purposes of this British Standard, the following definitions apply:

2.1 admixture

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

2.2 ball-catcher

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

NOTE In the piling industry, this is commonly referred to as a “blowout basket”, “washout basket” and “catch basket”.

2.3 banksman

person with appropriate training who directs vehicle movements on site

2.4 boom tip safety device

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

2.5 competent person

person engaged by the owner who has responsibility for thorough examinations and who has had sufficient experience, instruction and training to enable them to carry out their duties

2.6 concrete

homogenous mix of cement, graded aggregate and water, to which additives might be added

2.7 concrete-placing boom

device to support and position the delivery pipeline

NOTE 1 For the purposes of this standard, the term is applicable to rotary/circular distributors.

NOTE 2 A concrete-placing boom is often an adjunct to the concrete pump, but is not essential in some applications.

2.8 concrete pump

item of plant that works by pistons or a rotary pump and is used for pumping or spraying concrete to the placing position through a delivery pipeline alone or through a delivery pipeline attached to a concrete-placing boom

2.9 delivery pipelines

lines, whether steel or rubber, through which the concrete is conveyed

NOTE These include pipelines, hoses, coupling connectors and any valves inserted in the line. Each element of the pipeline is capable of resisting the likely maximum pressure plus a safety margin exerted by the concrete pump.

2.10 hirer

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

2.11 interlock

mechanical, electrical or other type of device, the purpose of which is to prevent the operation of hazardous machine functions under specified conditions (generally as long as a guard is not closed) [BS EN 12100-1]

2.12 lorry-mounted concrete pump

concrete pump that is mounted on a self-propelled lorry

2.13 owner

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

2.14 placement hose

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

2.15 receiving hopper

hopper into which the mixed concrete is discharged

NOTE The hopper contains the valve gear for transferring the concrete from the concrete pistons into the delivery line. It might also contain mixer paddles on a revolving shaft. Access doors and an interlocked protective grille are fitted to prevent persons from coming into contact with the moving machinery.

2.16 remote control box

portable control panel, which is connected to the concrete pump by a cable or radio system, allowing the concrete pump operator to operate the machine from a remote position

NOTE The control levers/switches may operate the concrete placing-boom movements, the concrete pump and the vehicle engine.

2.17 safety induction training

instruction given by the principal contractor, owner or hirer/(sub)contractor to communicate the site safety rules, safe access on the site, the location of welfare facilities, etc.

NOTE The provider of the training may determine that the delivery of induction training on the first visit to the site is sufficient but insist on further training if site conditions change significantly.

2.18 signaller

person with appropriate training who gives directions to the concrete pump operator by a recognized code of signals or by verbal communication

2.19 sponge/rubber cleaning device

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 pipelines and is propelled along the delivery pipeline either by the action of the pump (forward or reverse), compressed air or water pressure

2.20 stabilizers

structural members on the concrete pump unit that increase the stability of the concrete pump

NOTE These may also be known as “out-riggers”.

2.21 trailer-mounted concrete pump

concrete pump that is mounted on a trailer that can be towed

NOTE These may also be known as static concrete pumps, i.e. skid-mounted or fixed units.

2.22 wash-out adapter

short length of pipeline with one end blanked off and a connection for a water/compressed air hose and pressure-relief valve for cleaning purposes

NOTE In the piling industry, this is commonly referred to as a “blowout gun”, “blowout chamber”, “blowout cannon”, “washout gun”, “washout chamber” and “washout cannon”.

3 Selection of personnel

NOTE The safe operation of a concrete pump relies heavily on the selection of suitable personnel who are competent to carry out the required duties.

3.1 Employers should have a drugs and alcohol policy. Employers should not select anyone whose efficiency is impaired by alcohol, drugs or other influences.

3.2 The concrete pump operator should:

- a) be competent;
- b) in the case of a lorry-mounted concrete pump operator, be over 21 years of age if driving a concrete pump on the highway;
- c) be medically fit, with particular regard to eyesight, hearing and reflexes;

NOTE This recommendation may be relaxed where an individual assessment shows that an operator is able to operate a concrete pump safely.

- d) be physically able to operate the concrete pump safely;
- e) be able to judge distances, heights and clearances;
- f) be adequately trained and certificated for the class of concrete pump which they operate (see Clause 4);
- g) have suitable and sufficient knowledge of the concrete pump and its safety devices;
- h) be fully conversant with the duties of the signaller and understand the signals in Annex A;