

**OCCUPATIONAL SAFETY  
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS**

## CALIFORNIA CODE OF REGULATIONS

TITLE 8: Chapter 4, Subchapter 4, Article 29, Section 1720  
of the Construction Safety Orders.

Concrete Pumps and Placing Booms.**MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM  
THE 45-DAY PUBLIC COMMENT PERIOD**

There are no modifications to the information contained in the Initial Statement of Reasons except for the following substantive, non-substantive and sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

Subsection 1720(b)(2), Definitions for concrete pumps and placing booms.

As originally noticed, each defined term was designated with a separate subsection identifier [i.e., (A), (B), etc.] A non-substantive modification is proposed to delete the subsection identifiers for each defined term. The purpose and necessity for these modifications is for consistent formatting with other definitions found in Title 8.

Subsection 1720(b)(2), Definitions. Concrete delivery hose.

This subsection, as originally noticed, defined "concrete delivery hose" as "a flexible concrete delivery hose which has two end couplings." A clarifying modification is proposed to change the definition to "a flexible delivery hose having a coupling on each end." The purpose and necessity for this proposed change is to respond to public comment and to be consistent with adopted (and soon to be published) industry consensus standard ANSI/ASME B30.27.

Subsection 1720(b)(3)(B), Set-up and operation. Exception 2 for (b)(3)(B)3.

Subsection (b)(3)(B) states that concrete delivery hoses shall not be used as end hoses. A new exception is proposed to permit the use of a delivery hose as an end hose when delivering concrete for flatwork if the hose is supported by the walking/working surface.

When pouring flatwork where the boom cannot reach (or where no boom is used), it is the normal practice in the industry to run a delivery hose across the walking/working surface to the far end of the pour and then to "break-back" the hose, piece-by-piece as work progresses from the far end of the pour back toward the pump.

The use of delivery hoses (with end couplings at each end) is hazardous when the hose is suspended from a placing boom with no other support to prevent the hose from whipping and

striking the hose man or others in close proximity. However, if the hose is run horizontally along the walking/working surface to make a pour, the contact of the hose with the horizontal surface will provide restraint to minimize whipping. Furthermore, should the worker lose control of the hose, it will fall on the surface which will act to further prevent or minimize whipping. It would be more hazardous for the worker placing flatwork to have to stop pumping to reinstall an end hose each time a section of the delivery hose is removed than it is to just use the remaining delivery hose sections for placement.

The purpose and necessity for this exception which is applicable only to flatwork is to respond to public comment to permit a common practice in the industry which poses no unusual hazard.

Subsection 1720(b)(3)(C)2, Exception:

Subsection (C)(2), as originally noticed, provides that if there are several control locations, the same operation shall only be possible from one location at a time. Subsection (C)(4) also requires that each machine be equipped with emergency stop controls. This new exception to (C)(2) is proposed to clarify that the emergency stop controls required by subsection (C)(4) shall have priority over other controls and shall be operable from any installed location. This clarification is in response to public comment. Its purpose is to clarify that emergency stop controls shall take priority over any other controls and that they shall be operable from any installed location. The necessity is that the emergency stop system must be capable of overriding all other controls and must be operable from any connected location; i.e., all points of operation must be maintained in operating order.

Subsection 1720(b)(3)(F)1, Warning signs.

This subsection, as originally noticed, provides that concrete placing booms shall be posted with durable, permanent warning signs in accordance with Section 2947 of the Electrical Safety Orders. A modification is proposed to delete the word “permanent.” This proposed modification is the result of public comment which correctly noted that it is virtually impossible for any sign to be “permanent,” particularly in the harsh environment that concrete placing booms often operate. The Board is of the opinion that requiring “permanent” warning signs is unduly burdensome and that “durable” warning signs which can be replaced will provide equivalent safety. The purpose of this proposed modification is to respond to public comment and the necessity is to provide reasonable and enforceable standards.

Subsection 1720(b)(4)(A) and (A)1, Inspection, maintenance and repairs.

Subsections (b)(4)(A) and (A)(1), as originally noticed, required inspections to be performed by a qualified person prior to daily use. It is proposed to change the reference from “qualified person”<sup>1</sup> to “qualified attendant or operator.” This modification is made in response to public comment that it is common in the industry for daily inspections to be performed by the pump operator or mechanic. This practice is also permitted by national consensus standards CPMA27-2000 and ANSI/ASME B30.27. The commenters opined that use of the term “qualified person” could be misinterpreted to require the pre-operation inspections to be done by a more skilled and more highly paid individual than is necessary for the tasks prescribed. The purpose and

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<sup>1</sup> “Qualified Person, Attendant or Operator” is defined in Section 1504 as, “A person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal, state, or local laws and regulations.”

necessity for these changes is to provide consistency with national consensus standards and common practice in the industry.

Subsection 1720(b)(4)(D)1, Inspection records.

This subsection, as originally noticed, provides that inspection records shall include the identification of the components and parts inspected and tested. It is proposed to change “identification” to “listing.” This modification is made in response to public comment that “identification” could be misinterpreted to require specific part numbers. The Board notes that industry consensus standards ANSI/ASME B30.27 and CPMA27-2000 do not require the identification of specific part numbers in recordkeeping. The purpose and necessity for this modification is to conform recordkeeping provisions to national consensus standards.

Subsection 1720(b)(4)(D)2, Inspection records.

This subsection, as originally noticed, provides that inspection records shall include a description of test methods, results and repairs made. It is proposed to change “a description of...” to “a brief description of...” This modification is made in response to public comment that “description” could be misinterpreted to require a step-by-step description. The Board notes that industry consensus standards ANSI/ASME B30.27 and CPMA27-2000 do not require this level of specificity in recordkeeping. The purpose and necessity for this modification is to conform recordkeeping provisions to national consensus standards.

Subsection 1720(b)(5), Manufacturer no longer in business.

This subsection addresses situations where the manufacturer of the concrete pump and/or placing boom is no longer in business and manufacturer’s specifications are no longer available. The text, as originally noticed, required set-up, operation, inspection, and maintenance procedures and repairs to be specified by a registered professional engineer experienced in the design of concrete pumps and placing booms. It is proposed to change “registered professional engineer” to “qualified person” and to change “experienced in the design...” to “experienced in the field...” Comments received indicated that there are only a very limited number of registered professional engineers with experience in the design of concrete pumps and placing booms who are qualified to prepare set-up, operation, and maintenance procedures. The term “qualified person” will permit the utilization of persons with expertise in this field. Thus, the purpose and necessity for these changes is to remove unnecessarily restrictive and burdensome language without sacrificing safety.

Subsection 1720(b)(5)(B), Manufacturer no longer in business.

This subsection was originally noticed as subsection (A) and prescribed that repairs shall be performed by a qualified person under the direction of a registered professional engineer experienced in the design of concrete pumps and placing booms. It is proposed to redesignate this subsection as 1720(b)(5)(B) and to modify the subsection to include inspection and maintenance, as well as repairs. It is also proposed that in lieu of being performed under the direction of a registered professional engineer experienced in the design of concrete pumps and placing booms, these tasks be permitted to be performed in accordance with the specifications and procedures established under the provisions of the foregoing subsection which is proposed to be redesignated subsection (A). These changes are proposed for consistency with requirements for equipment where the manufacturer is still in business. The purpose and necessity for these

changes is to remove unnecessarily restrictive and burdensome language without sacrificing safety.

Summary and Response to Oral and Written Comments:

I. Written Comments

The Board received comments on the proposal by telecopy dated June 21, 2005, from the following individuals:

<u>Name:</u>	<u>Title:</u>	<u>Affiliation:</u>
Mike Cusak	Past President	Concrete Pumping Association
Jim Bury	Manager - Engineering, Quality and Documentation	Putzmeister America
Robert Edwards		Schwing America
Art Fink	Owner	Associated Concrete Pumping
Doug Marquis	Manager	Conco Pumping
Gunther Merli	Owner	Merli Concrete Pumping
Duane Remus	Dir. of Technical Development	Reed Manufacturing

Comment No. 1:

The commenters requested a definition be added to Section 1720(b)(2) for “qualified person” as “a person who, by possession of a recognized degree in an applicable field, or certificate of professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter and work.” They stated that this would harmonize Title 8 with CPMA 27-2000 and ASME B30.27.

Response:

Qualified person is defined in Construction Safety Orders (CSO) Section 1504 as “A person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal state, or local laws and regulations.” To define the term differently for purposes of Section 1720 would overlap the existing definition and potentially create confusion. Therefore the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment No. 2:

The commenters requested a definition for “designated person” as “a person selected or assigned by the employer or the employer’s representative as being competent to perform specific duties.” Their stated rationale is to harmonize Title 8 with CPMA 27-2000 and ASME B30.27.

Response:

The Board is of the opinion that the addition and definition of a new term is unnecessary. The Board proposes, instead, to use the already defined term “qualified operator” which is defined in Section 1504, as: “A person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal, state, or local laws and regulations.” This comment is also linked to Comment No. 10, which will be addressed below.

Comment No. 3:

The commenters requested changing the definition for “concrete delivery hose” to “a flexible delivery hose having a coupling on each end.” Their stated rationale is to harmonize Title 8 with CPMA 27-2000 and ASME B30.27.

Response:

The Board accepts this requested modification as it conforms the definition to the industry standard.

Comment No. 4:

The commenters requested modifying subsection (b)(3)(B)1 by adding the following: “If the manufacturer is no longer in business, a minimum of the industry safety manual shall be maintained and available to the operator.” Their stated rationale is that if the manufacturer has gone out of business, the manufacturer’s operation manual may no longer be available.

Response:

The Board has determined that the “industry safety manual” referred to by the commenters is the “Safety Manual” published by the American Concrete Pumping Association, Lewis Center, OH. The Board has reviewed this proposal and is of the opinion that, although the “Safety Manual” is a valuable tool to have available to the crew for covering hazards and their avoidance, it does not provide equipment-specific instructions for the set-up or operation of the equipment, and therefore it cannot be used in lieu of an operation manual prepared in accordance with the provisions of subsection (b)(5)(A). Therefore the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment No. 5:

The commenters requested modifying subsection (b)(3)(B)3 by adding the underlined text as follows: “Concrete delivery hoses shall not be used as end hoses when suspended above workers.” They opine that the second end poses no unusual hazard when the delivery hose is lying on the ground.

Response:

Based on the discussion at the advisory committee, there are occasions where the delivery hose may be run across a walking/working surface for the placement of flatwork, such as decks and patios. In this situation, it is not uncommon for the installer to “break back” the hose section-by-section as he works back toward the pump from the farthest end of the pour. It would be difficult and possibly create a greater hazard if the worker had to re-attach the end hose after each hose section is broken off. This proposal is intended to permit this common practice of

breaking back the delivery hose when pouring flatwork. Therefore, the Board accepts this comment to the extent that such work will be addressed as an exception to subsection (b)(3)(B)3.

Comment No. 6:

The commenters requested adding an exception for subsection (b)(3)(C)2: “Emergency stop shall function from all connected locations.” Their stated rationale is that this important safety device should be working at all times and at all connected locations (which may be more than the minimum specified in this proposal).

Response:

The Board accepts this proposal to the extent that it proposes an exception that will read: “Emergency stop controls required by subsection (b)(3)(C)4 shall have priority and shall be operable from any installed location.”

Comment No. 7:

The commenters requested that subsection (b)(3)(E)1 be deleted entirely. They state that there have been no accidents involving pipeline falling from a boom, or with items suspended over workers from the last elbow (end hose or reducers). They opine this subsection is unnecessary because it is covered in the manufacturer’s operation manuals and safety manuals.

Response:

This section only pertains to piping and not to hoses. The substance of this section, previously found in subsection 1720(b)(1), has been in Federal OSHA Standards [29 CFR 1926.702(e)(1)], and California Title 8 Standards for many years. The advisory committee felt the existing verbiage, based on the Federal Standard lacked clarity. The Board therefore developed a clarification that has been found by Federal OSHA to improve employer/employee ability to understand the requirements of the standard and to be more effective than the Federal standard.<sup>2</sup>

Since California is required to be at least as effective as the counterpart federal standards, the Board cannot completely delete this provision as the commenters requested. One option would be to revert to the existing verbiage. Since the advisory committee found the existing language to be unclear, and Federal OSHA has accepted the proposed clarifications, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment No. 8:

The commenters requested modification to the warning sign requirement in subsection (b)(3)(F)1 to read “durable, replaceable ~~permanent~~ warning signs...” Their stated rationale is that warning signs cannot be made to last permanently, even using the best materials and inks. However, they state that each manufacturer supplies replacement warning labels on request.

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<sup>2</sup> Advisory opinion from USDOL, Region IX, to Keith Umemoto, Executive Director, OSHSB dated May 13, 2005.

Response:

The Board acknowledges that the proposed wording is subject to misinterpretation. The Board therefore proposes to modify the provision, consistent with Section 2947, by deleting “permanent.”

Comment No. 9:

The commenters requested amending the exception for Subsection (b)(3)(F)1 to read: “Minimum clearances from overhead high-voltage lines in accordance with manufacturers’ specifications may be posted instead of Section 2947 where minimum clearance distances are greater than those prescribed by Article 37 of the High-Voltage Electrical Safety Orders.

Response:

The exception for subsection (b)(3)(F)1 already permits manufacturers minimum clearances to be posted instead of those required by Section 2947 when the manufacturer’s clearances exceed those of Section 2947. Therefore, the proposed amendment is unnecessary and the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment No. 10:

With respect to subsections (b)(4)(A) and (b)(4)(A)1, the commenters requested that “qualified” be changed to “designated.” Their stated rationale is that using this term will permit the daily inspections to be performed by the pump operator or the mechanic which is the manufacturer’s intention for daily inspections. The commenters stated that a “qualified” person, in the terminology commonly used in this industry is typically a certified boom inspector and it is unnecessary, impractical and infeasible to require a certified boom inspector to perform these daily inspections.

Response:

“Qualified person, attendant or operator” as defined in Section 1504 permits daily inspections to be performed by the pump operator or mechanic. Thus, the Board accepts this comment to the extent that it proposes an amendment in order to add further clarity to the proposal, consistent with the industry usage of terms already defined in Title 8.

Comment No. 11:

With regard to subsection (b)(4)(C), the commenters requested removal of “by a qualified person.” Their stated rationale is that this modification would allow manufacturer’s specifications and procedures to determine whether the repairs can be made by a designated or by a qualified person.

Response:

“Qualified person” is defined in Section 1504 as “a person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal, state, or local laws and regulations.” Thus retention of the term “qualified person” will allow manufacturer’s specifications and procedures to establish qualifications for persons making repairs. The removal of this term would eliminate any qualifications for persons performing

these tasks. The Board therefore does not believe that further modification to the proposal is necessary as a result of this comment.

Comment No. 12:

With regard to subsection (b)(4)(D)1, the commenters requested deletion of the phrase “identification of the...” Their stated rationale is that this could create confusion as to what constitutes adequate identification; i.e., would each specific part number have to be identified?

Response:

This comment is consistent with concerns that were raised at the advisory committee, therefore the comment is accepted and the subsection has been revised as suggested.

Comment No. 13:

With regard to subsection (b)(4)(D)2, the commenters requested changing “A description...” to “The type...” They were concerned that this could be misinterpreted to require a step-by-step description of the inspection, rather than just identifying the type of inspection.

Response:

The Board accepts this comment to the extent that it proposes a clarification that the records need only include a brief description of test methods, results and repairs made.

Comment No. 14:

With regard to subsection (b)(5) for manufacturers no longer in business, the commenters requested changing “registered professional engineer” to “qualified person.” Their stated rationale is that there are no registered professional engineers experienced in the design of concrete pumps and placing booms who are qualified to design set-up, operation, and maintenance procedures. They opined that “qualified person” would allow experts in the field to be utilized.

Response:

The Board finds that the use of “qualified person” in this context will provide equivalent safety since, by definition, a qualified person is “a person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal state, or local laws and regulations.”<sup>3</sup> Therefore the Board accepts this comment. [Note: Also see response to Comment No. 15 below.]

Comment No. 15:

With regard to subsection (b)(5)(A) [Note: this subsection has been renumbered to(b)(5)(B)], the commenters requested changing “qualified person” to “designated person,” and “registered professional engineer” to “qualified person.” They also requested deletion of “experienced in the design of concrete pumps and placing booms.” Their stated rationale is that not all repairs are structural; for example, a mechanic can replace a fitting that leaks. They opine that a qualified person would know the level of skill necessary based on the nature of the repair

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<sup>3</sup> CSO Section 1504.

required. They also note that a registered professional engineer might be a good choice for some repairs; however, by definition, a registered engineer would be covered under the definition of qualified person.

Response:

The Board accepts this comment to the extent that changes are proposed to subsection (b)(5) [including subsections (b)(5)(A) and (B)]. These proposed changes will effectively conform requirements for inspection, maintenance and repair of equipment where the manufacturer is no longer in business and manufacturer's specifications are no longer available to those for equipment where the manufacturer is still in business [see subsection (b)(4)(C)].

The Board thanks the commenters for their suggestions, comments, and participation in the rulemaking process.

II. Oral Comments

Oral comments received at the June 16, 2005, Public Hearing in Irvine, California.

The following individuals gave oral testimony in support of the proposal:

<u>Name:</u>	<u>Title:</u>	<u>Affiliation:</u>
Armando Esparza	Business Manager	Laborers Local #652, Santa Ana, CA
Ralph Flores	Business Representative	Laborers Local #652, Santa Ana, CA
Jesse Renteria	Business Representative	Laborers Local #300, Los Angeles, CA

Comment:

These individuals stated that their members work with the placing boom and are directly affected by the proposed standards. A number of their members were also in the audience to show support for the proposed standards. The speakers emphasized that safety is imperative for concrete workers. Some said that they personally had worked with concrete placing booms and had personally witnessed instances of unsafe equipment. Mr. Renteria expressed concern about "blowouts" where a plug of concrete can break loose with enough force to puncture plywood. They all agreed that the proposal will increase worker safety.

Response:

The Board thanks the commenters for their testimony in support of the proposal and also thanks their members who attended for their participation in the rulemaking process.

Mr. Robert Edwards, representing Schwing America

Comment:

Mr. Edwards stated that he is Chair of the ASME B30.27 subcommittee and that he was one of the authors of CPMA 27-2000. He stated that, generally speaking, manufacturers support the proposal, but he felt that several issues need to be clarified. Mr. Edwards stated that tipping over of the pumps and whipping of hoses is not addressed. He also stated that some of the language was confusing, and suggested some further work on the proposal was necessary before adoption.

Response:

The Board extended the deadline for comments an additional three business days to permit Mr. Edwards and others to provide specific comments regarding their concerns. Those comments were received and have been addressed under the summary and response to written comments section.

The Board thanks Mr. Edwards for his comments and participation in the rulemaking process.

Mr. Mike Cusack, representing Conco Pumping

Comment:

Mr. Cusack stated that he had been a member of the advisory committee. He commented that he thought the proposal should be adopted with some clarifications and recommended that the advisory committee be reconvened. He specifically mentioned concerns about the definitions for end hose and control panels. He also stated that there are different types of inspections, and clarification is needed about what constitutes a “qualified person.” He added that there are no registered professional engineers in the concrete business except those in the employment of manufacturers.

Response:

Board staff requested an opportunity to respond to Mr. Cusack’s concerns before establishing a necessity for returning to advisory committee. The Board extended the deadline for comments an additional three business days to permit Mr. Cusack and others to provide specific comments regarding their concerns. Those comments which included the concerns expressed in the oral testimony were received and have been addressed under the summary and response to written comments section.

The Board thanks Mr. Cusack for his comments and participation in the rulemaking process.

Mr. James Bury, representing Putzmeister America

Comment:

Mr. Bury, whose company had been represented at the advisory committee, stated that although the advisory committee went well, he felt that some issues were not adequately addressed in the proposal. Specifically, he stated that it would be difficult to follow the “permanent label or decal” and “guarding section” language. He stated that he wanted to make sure that the new standard would not cause confusion or conflict with existing industry standards.

Response:

Mr. Bury was one of the commenters in the telecopy sent September 21, 2005. The Board extended the deadline for comments an additional three business days to permit Mr. Bury and others to provide specific comments regarding their concerns. Those comments which included the concerns expressed in the oral testimony were received and have been addressed under the summary and response to written comments section.

The Board thanks Mr. Bury for his comments and participation in the rulemaking process.

Mr. Leonard Levine, representing the National Concrete Pump Inspectors Association

Comment:

Mr. Levine was also a member of the advisory committee. He opined that some in the industry may resist any government standards due to cost concerns. However, he opined that one accident could cost more than a lifetime of inspections. He indicated his support of the proposal.

Response:

The Board thanks Mr. Levine for his support and for his participation in the rulemaking process.

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM  
THE 15-DAY NOTICE OF PROPOSED MODIFICATIONS

No further modifications to the information contained in the Initial Statement of Reasons are proposed as a result of the 15-day Notice of Proposed Modifications mailed on December 14, 2005.

Summary and Response to Written Comments:

No written comments were received.

ADDITIONAL DOCUMENTS RELIED UPON

“Safety Manual – A guide for the prevention of accidents when driving, operating, cleaning, and maintaining concrete pumps, placing booms, and related equipment.” Version 4.0.2+, December 2003. American Concrete Pumping Association, 606 Enterprise Drive, Lewis Center, OH 43035.

ASME B30.27, Material Placement Systems. Draft version, B3027\_02\_05.pdf. ASME, Three Park Avenue, New York, New York 10016-5990.

Letter to Keith Umemoto, Executive Officer of the Occupational Safety and Health Standards Board from Frank Strasheim, Regional Administrator, Region IX, U.S. Department of Labor, dated May 13, 2005.

These documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

These standards do not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed standard. No alternative considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the adopted action.