

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**TITLE 8: CALIFORNIA CODE OF REGULATIONS****Construction Safety Orders
Sections 1711, 1712, 1713, 1717 and 1721
(Published on October 28, 2016)****Reinforcing Steel Concrete Construction and Post-Tensioning Operations**

NOTICE IS HEREBY GIVEN that the Occupational Safety and Health Standards Board (Board) proposes to adopt, amend or repeal the foregoing provisions of Title 8 of the California Code of Regulations in the manner described in the Informative Digest, below.

PUBLIC HEARING

The Board will hold a public hearing starting at 10:00 a.m. on **December 15, 2016** in the **Auditorium** of the **State Resources Building, 1416 9th Street, Sacramento**. At this public hearing, any person may present statements or arguments orally or in writing relevant to the proposed action described in the Informative Digest.

WRITTEN COMMENT PERIOD

Any interested person may present statements or arguments orally or in writing at the hearing on the proposed changes under consideration. The written comment period commences on **October 28, 2016**, and closes at 5:00 p.m. on **December 15, 2016**. Comments received after that deadline will not be considered by the Board unless the Board announces an extension of time in which to submit written comments. Written comments are to be submitted as follows:

By mail to Sarah Money, Occupational Safety and Health Standards Board, 2520 Venture Oaks Way, Suite 350, Sacramento, CA 95833; or

By fax at (916) 274-5743; or

By e-mail sent to oshsb@dir.ca.gov.

AUTHORITY AND REFERENCE

Labor Code Section 142.3 establishes the Board as the only agency in the State authorized to adopt occupational safety and health standards. In addition, Labor Code Section 142.3 requires the adoption of occupational and health standards that are at least as effective as federal occupational safety and health standards.

INFORMATIVE DIGEST OF PROPOSED ACTION/POLICY STATEMENT **OVERVIEW**

This rulemaking is initiated as the result of OSHSB Petition File No. 537 submitted by Mr. Walter Wise, General President of the International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers, dated September 11, 2013. In the Board's Decision dated February 20, 2014, the Petitioner's request was granted to the extent that Board staff convene an advisory committee (committee) to consider amending Title 8 construction industry standards to address the Petitioner's concerns over the fact that Construction Safety Orders (CSO) Section 1712 contain limited references to rebar in conjunction with post-tensioning operations.

As stated by the Petitioner, there is a relationship between the hazards and injuries to workers in concrete reinforcing steel and post-tensioning operations. "Post-tensioning operation" is a method for reinforcing concrete involving the placement of steel cables inside plastic ducts or sleeves which are placed in concrete forms prior to placement of the concrete. This proposal is intended to reduce material handling related accidents due to site conditions, structural collapse of vertical formwork and decks, collapse of vertical and horizontal columns due to improper or faulty guying and bracing, insufficient, cramped working spaces and platforms from which to position heavy equipment, impalement, and post-tensioning accidents in post-tensioning operations attributable to lack of training. The Petitioner suggested proposed language to address his concerns which was discussed and considered by the committee convened by Board staff on October 27, and 28, 2014, in Sacramento, California.

As stated in the minutes of the committee meeting, consensus was reached on proposed amendments that would address a number of issues including but not limited to: definitions, site access and layout, notification and approval prior to the commencement of rebar installation, impalement protection, hoisting and rigging operations, post-tensioning operations, fall protection and employee training. Portions of the proposal pertaining to rebar and post-tensioning operations were based on various chapters of the American National Standard (ANSI)/American Society of Safety Engineers (ASSE) A10.9-2013 consensus standard "Safety Requirements for Concrete and Masonry Work," Section 10.3 standards for post-tensioning work. A synopsis of the proposed changes and relocation of existing Title 8 standards is as follows (sections refer to those contained in the ANSI A10.9-2013 standard):

Section 1711

- Of the 16 proposed Section 1711 definitions [*subsection b*], five originate from Section 3, and the definition of controlling contractor is taken from the ANSI definition of project constructor. Remaining definitions are terms already defined elsewhere in Title 8 (e.g. competent person) or were developed with advisory committee assistance (e.g. reinforcing steel assemblies).
- Site access and layout standards [*subsection c*] are derived from Section 10.3 with cross reference to existing Title 8 benching and shoring standards.
- Standards for written notification prior to commencement of reinforcing steel activities [*subsection d*] come from Section 10.3.2. While falsework and excavation inspections

are not new, the written verification requirement is new. Subsection (d) addresses written notification prior to the start of reinforcing steel activities, to be given by the controlling contractor to the reinforcing steel contractor, that all formwork, falsework and any excavation benching and shoring have been inspected and determined to be safe. [This requirement is based on Section 10.3.2.]

- Stability standards for vertical and horizontal columns, walls, and other reinforcing assemblies [*subsection e*] come from Section 10.3.3. Portions of this subsection come from existing Section 1712 requirements.
- Standards for impalement protection and custody of covers [*subsection f*] come from Section 10.3.4 with cross reference to existing Title 8 impalement protection standards.
- Standards for hoisting and rigging of reinforcement assemblies [*subsection g*] come from Section 10.3.5 with cross references to existing Title 8 load handling standards.
- Standards for post-tensioning operations [*subsection h*] come from Section 10.3.6 with cross references to existing Title 8 standards for guardrails and toeboards.
- Standards for fall protection [*subsection i*] come from Section 10.3.7, with cross references to existing Title 8 fall protection standards.
- Standards for formwork and falsework stability [*subsection j*] internally cross reference Sections 1713 and 1717, which are based on Section 10.3.8.1.
- Standards for training [*subsection k*] are based on existing Title 8 injury and illness prevention standards and Section 10.3.9.

Section 1712

- Fall protection requirements for employees engaged in placing or tying reinforcing steel and requirements for vertical and horizontal columns have been deleted and relocated to proposed Section 1711 as subsections (e) and (i).

Section 1713

- Subsection (c) contains language prohibiting the use of reinforcing steel as a guy or brace and is similar to what is contained in the proposed Section 1711(e)(3), which is based on Section 5.4.

Section 1717

- Proposed subsection (f) standards pertaining to controlling contractors prohibiting employee access to bridge decks during jacking and grading operations are derived from Section 10.6.5.

Section 1721

- The existing Section 1721 post-tensioning operations are deleted and proposed to be relocated to Section 1711(h).

The bulk of the proposal's new language is contained in Section 1711 and is based on the ANSI A10.1-2013 standard. This language is new and is not contained anywhere else in Title 8 to the

detail presented herein. The regulated public engaged in post-tensioning operations will benefit from the creation of an identifiable, stand-alone vertical standard that is cross referenced to clarify the employer's duty and protect job-site employees from the post-tensioning related occupational hazards described in Petition No. 537, which can result in serious employee injury and/or fatality. This issue was discussed extensively during the advisory committee deliberations.

In addition to the relocation of some existing Title 8 standards and cross references, the proposal consists largely of consensus document-based regulatory text specifically addressing post-tensioning operations in greater detail than that addressed by Federal OSHA in its 29 CFR 1926.701(c) standards which consist of minimal provisions similar to those contained in CSO Section 1721. The proposal contains a list of defined terms that are not addressed by current federal OSHA standards, more detailed post-tensioning specific site access requirements, written notification before commencing work provisions, placement of support system design responsibility upon the controlling contractor (CC), and expanded rebar impalement protection standards than what is addressed in 29 CFR 1926.701(c)(1).

This proposal establishes the duties of controlling contractors (also known as project constructors) placing a number of responsibilities including, but not limited to: site access and layout, written notification, prohibiting other construction processes below or near the erection of reinforcement assemblies and impalement protection and cover custody. This is entirely consistent to what is provided in the ANSI A10.9-2013 standard which is the primary basis for this proposal. Placing the controlling contractor in the primary responsibility role is also consistent with other Title 8 standards such as CSO Section 1710 steel erection and, as reflected in the advisory committee minutes, the consensus of the committee. The controlling contractor or project constructor is in the best position to ensure that the various trades that come onto, work, and depart from a jobsite, are protected from falls, impalement and other hazards related to post-tensioning operations, as was determined on a national level via the ANSI A 10.9 committee and reflected in the A10.9-2013 standard and the Board staff's advisory committee.

This proposed rulemaking action is not inconsistent or incompatible with existing state regulations. This proposal is part of a system of occupational safety and health regulations. The consistency and compatibility of that system's component regulations is provided by such things as: (1) the requirement of the federal government and the Labor Code to the effect that the State regulations be at least as effective as their federal counterparts, and (2) the requirement that all state occupational safety and health rulemaking be channeled through a single entity (the Standards Board).

The specific changes are as follows:

Section 1711. Oiling Forms.

This section addresses the oiling of floor panels used to protect employees conducting rebar operations and requires that such panels not be removed until carpentry work on the form has been completed.

This section is proposed to be relocated to Section 1713(d). Section 1713 is retitled to read, “Framed Panels and Concrete Forms.” Section 1711 is renamed “Reinforcing Steel and Post-Tensioning in Concrete Construction” to clarify to the employer the location of the related post-tensioning standards.

A proposed subsection (a), entitled “Scope and Application,” establishes the application of the proposed provisions relating to the use of reinforcing steel used in concrete and masonry construction including post-tensioning operations. This subsection also establishes the duties of the CC. The proposed amendment will clarify to the employer where the pertinent rebar and post-tensioning requirements are located and where the CC duties/responsibilities are located. This subsection also contains two Notes that further clarify to the employer where additional rebar and concrete construction requirements may be found and provide information to the employer that other relevant General Industry Safety Order and CSO provisions may apply to concrete and masonry construction operations.

A proposed subsection (b), entitled “Definitions,” clarifies to the employer the application and meaning of 16 new definitions that are used in the subsequent proposed rebar and post-tensioning standards.

A proposed subsection (c), entitled “Site Access and Layout,” establishes responsibilities of the CC. The proposed amendments will ensure that the responsibilities for ensuring adequate site access, site conditions, platforms and safe excavations will be consolidated under the responsibility of the CC. The proposed amendments will also ensure safe access, site conditions and means are provided to perform reinforcing and post-tensioning work safely.

A proposed subsection (d), entitled “Written Notification Prior to Commencement of Reinforcing Steel Activities,” requires the CC to obtain written verification that the reinforcing steel contractor has received notification that the formwork and falsework have been inspected by a competent person prior to, during and immediately after the installation of rebar and concrete placement. Subsection (d) also requires that all elevated platforms are structurally sound and stable, and that all related excavation benching and shoring have been inspected by the competent person. While inspection requirements for falsework and excavations are existing requirements, the written verification requirement is new. Proposed subsection (d) ensures that the systems and equipment critical to performing rebar and post-tensioning activities, both on and above the ground, and the site conditions where the work is to be done, are stable and secure such that the work can be conducted safely, thus minimizing the risk of collapse, or catastrophic failure which could result in serious employee injury or fatality.

A proposed subsection (e), entitled Stability Requirements for “Vertical and Horizontal Columns, Walls and Other Reinforcing Assemblies,” consists of procedural safe practice steps. Portions of these requirements were relocated to subsection (e) from Section 1712(f). These amendments will ensure that the assemblies and supporting structures erected for reinforcing steel and post-tensioning operations will not be subject to catastrophic failure and collapse which could result in serious employee injury or fatality.

A proposed subsection (f), entitled “Requirements for Impalement Protection and Custody of Protective Covers,” requires employees to be protected against impalement in accordance with existing CSO Section 1712 impalement protection standards. This is an existing requirement with no new or added effect other than to remind employers performing post-tensioning operations involving reinforcing steel that Section 1712 applies to their operations.

The second requirement of subsection (f) has multiple parts, and provides that the CC must accept transfer from the reinforcing steel contractor of responsibility for rebar protective covers remaining in place after completion of reinforcing steel operations, and provides for subsequent transfer of responsibility for the rebar protective covers from the CC to another contractor. These requirements are new and come directly from Section 10.3.4 of the ANSI A10.9-2013 standard.

The effect of these requirements is prevention of impalement of workers of other trades who work on the jobsite. The CC, who already has oversight of the actions of the various trades, is in the best position to oversee this issue and take appropriate action. It is imperative that a sufficient number of approved reinforcing steel (rebar) caps be provided and used to protect workers from impalement. An employee who falls or is pushed onto an exposed rebar end is at risk of potentially disabling or fatal impalement. These requirements seek to make clear the necessity of carefully securing rebar caps to each and every exposed rebar end, and of keeping those end caps securely in place over the entire period of time the rebar end is exposed.

A Note is proposed following subsection (f), clarifying that the CC’s responsibility to maintain control and custody of the protective covers does not relieve other contractors from their responsibility to ensure all employees are protected from impalement hazards. The proposed requirements will ensure that protection from impalement hazards is provided to all employees working on jobsites where reinforcing steel and post-tensioning work is done (not just those performing reinforcing steel and post-tensioning operations).

A proposed subsection (g), entitled “Requirements for Hoisting and Rigging Reinforcement Assemblies,” addresses the use of qualified riggers to regularly inspect rigging, and precluding work under suspended loads through layout of roads by pre-work planning except when employees place or connect the initial assembly or when employees must hook or unhook the load. The proposed amendments also provide criteria that must be met when employees work under suspended loads, use of a qualified rigger and proper rigging hardware. The proposal also requires all lifting devices used to lift and suspend pre-assembled cages, walls and columns must be rated to suspend the intended loads and fabricated under the direction of a California professional engineer. Finally, the proposal requires the controlling contractor to prohibit any activity in the hazardous hoisting area including loading and unloading and staging areas for reinforcement assemblies.

The proposed amendments ensure that suspended loads are safely secured and rigged for hoisting as verified by qualified rigging personnel. Site workers will be protected against being struck by suspended loads of reinforcing steel and post-tensioning assemblies that become unstable/unsecured as a result of breaking loose or spilling from their rigging. By prohibiting employees from working under a suspended load or one that is unloaded for staging, hazardous

and potentially catastrophic contact which could result in serious employee injury or fatality will be prevented.

A proposed subsection (h), called “Post-Tensioning Operations,” addresses various post-tensioning safety issues/procedures. The proposal relocates existing language from Section 1721(a) and (b) relating to prohibiting employees from being behind the jack during post-tensioning and use of signs and barricades to proposed subsection (h), the remainder of the proposed text comes from Section 10.3.6 of the ANSI standard.

The proposed amendments ensure that properly stressed concrete is used and employees are protected from being injured during concrete stressing and tensioning operations whether caused by inadvertent contact or catastrophic failure of the stressing equipment or failure of the support systems to secure and stabilize the various stressing and post-tensioning components and systems. The above grade process of stressing tendons, cutting tendon tails and grouting has proven to be among the most dangerous operations associated with post-tensioning operations. It involves very heavy and awkward equipment which, when used in the absence of adequate space, has led to crushing injuries to the extremities. Providing the specified platform ensures that employees will gain access to perform post-tensioning operations in a manner that accommodates tools while working from a secure and stable working surface with sufficient room to prevent inadvertent contact with machinery and equipment and prevent falls to the level below. The platform is a consensus standard requirement contained in Section 10.3.6.5 of the ANSI standard.

New subsection (i), “Fall Protection,” establishes a six foot trigger height for employees who place or tie reinforcing steel in walls, piers, columns, etc., above an adjacent surface unless a personal fall protection system in accordance with CSO Section 1670 or other method providing equivalent fall protection is used. An exception to this requirement is provided as it is in Section 10.3.7.1 of the ANSI for reinforcing steel iron workers who may be permitted limited point-to-point travel horizontally or vertically on reinforcing steel up to 24 feet above the surface below, in the absence of impalement hazards. The point-to-point travel exception is an element of the existing CSO Section 1712 reinforcing steel standard, which is relocated to new subsection (i), since point-to-point travel is an issue in post-tensioning work that involves the use of reinforcing steel.

These proposed amendments control the fall risk to all jobsite employees involved in various reinforcing steel placement operations including point-to-point travel. A fall from elevation during reinforcing steel placement operations could result in serious injury or fatality.

A proposed subsection (j) requires formwork and falsework stability and securing be provided in accordance with CSO Sections 1713 and 1717. This requirement clarifies to the employer that the formwork and falsework used in conjunction with reinforcing steel and post-tensioning operations are subject to existing Title 8, Sections 1713 and 1717 scaffolding (aka falsework) and formwork requirements.

A proposed subsection (k), “Training Requirements,” addresses the need to train employees who perform reinforcing steel and/or post-tensioning operations, with training in the hazards unique

to these operations in addition to that already required by Section 1509 (injury and illness prevention program for construction). The training is to be conducted by a qualified person and addresses: post-tensioning and reinforcing steel hazards, and the proper procedures and equipment to perform the operations.

These amendments ensure employees involved in the various reinforcing steel and post-tensioning, stressing operations understand how to perform those operations safely, how to take precautions to safeguard themselves and others and be able to recognize an unsafe condition that could result in serious employee injury or fatality.

Section 1712. Reinforcing Steel and Other Similar Projection.

This section contains various requirements that apply to all worksites where employees are exposed to the hazards of impalement by exposed reinforcing steel. An amendment is proposed to revise the section title for clarity to read, “Requirements for Impalement Protection.”

Subsection (e) Fall Protection.

This subsection prohibits employees from placing or tying the reinforcing steel in walls, piers, columns, etc., more than six feet above the adjacent surface unless a personal fall protection system or equivalent is used. It excludes limited point-to-point, horizontal or vertical travel on reinforcing steel up to 24 feet above the surface providing there are no impalement hazards.

An amendment is proposed to delete this subsection in its entirety as it has been relocated to Section 1711 as new subsection (i).

The proposed deletion and relocation of fall protection requirements is made to clarify by way of consolidating these requirements under the proposed Section 1711, which contains the relevant requirements pertaining to reinforcing steel and post-tensioning operations.

Subsection (f) Securing Reinforcing Steel.

The regulatory text of subsection (f) is relocated and placed under new Section 1711(e) as they are issues that are recognizably connected to the use of rebar for walls, piers, columns, prefabricated reinforcing steel assemblies and similar vertical structures which are to be guyed, braced or supported. The clarifying relocation of this text consolidates issues for easy recognition and access by the regulated public.

Section 1713. Framing and Concrete Forms.

This section addresses the securing of framed and formed panels against movement and requires panels in excess of 500 pounds to utilize lifting attachments with a safety factor of 4. It also prohibits nailed lifting attachments. A proposed amendment revises the section title to read, “Framed Panels and Concrete Forms” for clarity and consistency with the regulatory text that follows. A proposed amendment to subsection (b)(1) adds the words “and forms” after “panels,” thus rendering the requirement inclusive of forms. This ensures that forms will be safely hoisted

in a manner that will prevent falling or collapse onto employees resulting in serious employee injury or fatality. Subsection (c) prohibits reinforcing steel from being used as a guy attachment, for which an amendment is proposed to delete the word “attachments” and adds language to read, “...as a guy or brace to support framed panels or concrete forms from falling.” This amendment is derived from Section 5.4 of the ANSI standard and improves the stability of reinforcing steel by making sure employees do not use reinforcing steel as a guy or brace which could lead to instability and catastrophic failure.

A proposed subsection (d) prohibits the application of form release oil to horizontal formwork until the carpentry work is completed and the form is able to support the loads imposed upon it. The proposed language is relocated from an existing single-sentence requirement contained in Section 1711 and ensures that the form is not released prematurely and suddenly which could cause the form to come in contact with carpenters.

Section 1717. Falsework and Vertical Shoring.

This section contains requirements to assure the safety of falsework and vertical shoring from an engineering and design standard. A proposed subsection (f) requires the CC to prohibit employees from accessing the bridge decks during the jacking and grading operations. This amendment, based on Section 10.6.5 of the ANSI standard, will ensure that employees are protected from coming in contact with deck equipment, materials and debris that could be accidentally released during these operations which could strike the employee and result in serious injury or fatality.

Section 1721. Post-Tensioning Operations.

This section consists of two subsections pertaining to prohibiting employees behind the jack during tensioning operations and signs and barricades to limit employee access to the post-tensioning area during tensioning operations. It is proposed that these two subsections be deleted and relocated for clarity and consistency to new Section 1711(h), which contains the relevant requirements pertaining to post-tensioning operations. These requirements are based on Section 10.6, .3, .4 and .5 of the ANSI standard. This is also proposed to be done so that post-tensioning requirements can be consolidated into a vertical set of standards so that the employer’s duty to comply will be clearer and easier to locate.

Anticipated Benefits

This regulatory action pertains to safe work practices for the installation and placement of rebar in conjunction with post-tensioning operations and intends to reduce the number of injuries, accidents attributable to rebar impalement, falls from elevation, improper landing of materials, and injuries experienced during the post-tensioning of concrete prior to placement of the concrete mix. The proposal addresses the accident potential created by impalement hazards, misuse of material handling equipment, inadequate work space and insufficient work platform area which could result in contact between workers and such equipment. It also serves to avert accidents resulting from the lack of communication between workers performing these operations, their immediate supervisors and the CC in charge of the overall operation. It will

inform and instruct employees to a higher level of competence through training to ensure the safest possible work procedures are carried out and used from the planning stages through the completion of the project. This rulemaking proposal has no effect on the state's environment.

DOCUMENTS INCORPORATED BY REFERENCE

None.

DISCLOSURES REGARDING THE PROPOSED ACTION

Mandate on Local Agencies and School Districts: None.

Cost or Savings to State Agencies:

The Board staff is not able to ascertain any state agencies including the California Department of Transportation (Cal-Trans) that conduct post-tensioning operations in conjunction with highway and bridge operations. According to a Cal-Trans representative, this type of work is typically conducted by contracted construction companies not by Cal-Trans's employees. Consequently, there would be no direct cost impact upon State agencies as a result of this proposal. Indirect or trickle-down costs are difficult to ascertain, but according to two individuals representing State and local government entities who submit projects out to bid involving the type of work regulated by the proposal, both agreed that such costs would be proportionally insignificant in comparison to the overall project cost. The costs to government entities is further softened because bidding contractors are not necessarily imposing costs on any one contractee/client but spreading incremental costs over many clients/bids.

Cost to any Local Government or School District which must be Reimbursed in Accordance with Government Code Sections 17500 through 17630: None.

Other Nondiscretionary Cost or Savings Imposed on Local Agencies:

See "Cost or Savings to State Agencies."

Cost or Savings in Federal Funding to the State: None.

Cost Impacts on a Representative Private Person Or Business:

The Board is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

Statewide Adverse Economic Impact Directly Affecting Businesses and Individuals: Including the Ability of California Businesses To Compete:

The Board has made an initial determination that this proposal will not result in a significant, statewide adverse economic impact directly affecting businesses/individuals, including the ability of California businesses to compete with businesses in other states.

The proposal contains a provision in proposed Section 1711(h)(5), which requires an adequate work platform of at least three feet for post-tensioning operations. In testimony received at the October 27, and 28, 2014, advisory committee meeting, it was learned that certain types of building construction such as those constructed with “flying deck” forms might present a challenge for the employer to provide such platforms. However, it is important to note that many manufacturers are providing space for safe work platforms on their flying deck systems. The cost of these platforms is estimated to be in the thousands of dollars, the cost being a function of the square footage size of the platform, how many individual platforms are used and whether parts of the platforms can be reused for other jobs. However, the committee reasoned that any challenge to the use of such platforms as prescribed by subsection (h)(5) could be easily overcome or greatly softened by planning for the use of the platforms during the project’s design and contract stage. In fact, one stakeholder testified that many of the large concrete form suppliers in Southern California have the added space allowed for in their flying deck form systems.

The committee also reasoned that use of a three-foot working platform in post-tensioning operations would reduce accidents, increase productivity and ultimately result in a cost savings for all employers; the committee agreed that many costly serious and fatal accidents would be prevented by the proposal. A single employee injury or fatality can result in direct and indirect costs in the hundreds of thousands of dollars, not to mention the costs associated with delays if the project is curtailed or shut down following a serious accident that involves one or more employees. Multiple employee incidents are likely to result in a multiplication of these costs. There may also be significant litigation costs imposed upon employers. Consequently, incidents involving multiple employees could create costs easily reaching into the millions of dollars. It can be seen from the committee minutes that the sum total response of stakeholders is focused on the belief that the remainder of the proposal does not appear to present any concerns related to new or added costs since the proposal in large part addresses procedures and practices that should already be taking place, such as providing a safe worksite, impalement protection, fall protection and safe and secure working surfaces (i.e. reinforcing steel formwork and falsework) from which post-tensioning is performed.

Significant Affect on Housing Costs: None.

DETERMINATION OF MANDATE

The Board has determined that the proposed standard does not impose a local mandate. There are no costs to any local government or school district which must be reimbursed in accordance with Government Code Sections 17500 through 17630.

SMALL BUSINESS DETERMINATION

The Board has determined that the proposed amendments may affect small businesses. However, no economic impact is anticipated. The proposal contains a provision in proposed Section 1711(h)(5) which requires an adequate work platform of at least three feet for post-tensioning operations. In testimony received at the October 27 and 28, 2014, advisory committee meetings, it was learned that certain types of building construction such as those

constructed with “flying deck” forms might present a challenge for the employer to provide such platforms. However, it is important to note that many manufacturers are providing space for safe work platforms on their flying deck systems. The committee reasoned that any challenge to the use of such platforms as prescribed by subsection (h)(5) could be easily overcome by planning for the use of the platforms during the project’s design and contract stage. In fact, one stakeholder testified that many of the large concrete form suppliers in Southern California have the added space necessary allowed for in their flying deck form systems.

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RESULTS OF THE ECONOMIC IMPACT ASSESSMENT/ANALYSIS

The proposed regulation will not have any effect on the creation or elimination of California jobs or the creation of new businesses or the elimination of existing California businesses or affect the expansion of existing California businesses. With regard to the proposal’s requirement in Section 1711(c)(3) pertaining to the erection of exterior platforms for material handling purposes, the proposal requires engineered exterior platforms for all construction trades to safely hoist and access materials on multi-floor buildings and is considered to be a “safety through design” provision with an approximate cost of \$8,000.00 per platform. These platforms can be used for several purposes and trades other than reinforcing steel contractors, as needed. It should be noted that proposed Section 1711(h)(5) and the requirement for a 3 foot exterior formwork platform for safe access for post-tensioning operations is another example of what is referred to as a “safety by design” element of the proposal and has an approximate cost of \$1,144.00 for each platform. This platform will have a widespread protective effect to all workers and trades who need access along the structure perimeter.

The October 27 and 28, 2014, committee reasoned that use of platforms, when it is feasible to use them, would reduce accidents and increase productivity; the committee agreed that many costly serious and fatal accidents would be prevented by the proposal.

The cost to comply with proposed subsection (k) training costs of tailoring the Injury and Illness Prevention Program (IIPP) training to address reinforcing steel and post-tensioning issues will be approximately \$170.00 per employee. The training can be conducted by anyone selected by the employer who meets the definition of qualified person and could be someone from the employer’s workforce at large as opposed to having to hire a trainer or contracting out for the service.

Specific cost breakdowns are outlined on the attachment to the Economic and Fiscal Impact Statement.

BENEFITS OF THE PROPOSED ACTION

The proposal would:

- Reduce accidents relating to material handling mishaps due to site conditions, structural collapse of vertical formwork and decks, collapse of vertical and horizontal columns, impalement, and post-tensioning accidents attributable to ignorance of the safety and health issues addressed by Section 1711(k) training requirements.
- Increase productivity resulting from work practice improvements, including the provision of additional space via platforms and platform extensions to perform post-tensioning, safely land materials and ensure a more efficient (coordinated) approach to accomplishing post-tensioning safely by site personnel.
- Result in a cost savings for all employers vis a vis the reduction in serious and fatal accidents and their related costs that can result in project/jobsite down time, enforcement investigation and liability, litigation, medical expenses, and all other associated worker compensation costs attributable to falls from elevation and/or impalement.
- Result in a more user friendly standard for the post-tensioning issue, thus better compliance from the consolidation and “verticalization” of reinforcing steel and post-tensioning standards in the proposed subsections.
- Lead to an overall improvement in the level of clarity needed to ensure employers and employees are competent to perform post-tensioning operations safely and in accordance with the proposed standards by knowing where such requirements are located (ready identification).
- Lead to enhanced clarity as afforded by the proposed, amended definitions that define the meaning and context of the proposed standards which again translates into employees who will work in the greatest safety by virtue of the training required by the proposal.
- Lead to an improvement in the overall level of communication on the jobsite between host and contract employers ensuring that the parties involved in post-tensioning operations are working in a synchronous and safe manner.
- Ensure that all equipment and components whose integrity and good condition is critical to safe performance during post-tensioning operations and preventing catastrophic failures is maintained throughout the process.

CONSIDERATION OF ALTERNATIVES

In accordance with Government Code Section 11346.5(a)(13), the Board must determine that no reasonable alternative it considered to the regulation or that has otherwise been identified and brought to its attention would either 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 or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law than the proposal described in this Notice.

The Construction Employers Association (CEA) who represent many CCs (as defined in the proposal), were represented at the October 27, and 28, 2014, advisory committee convened by Board staff and were afforded extra time following conclusion of the committee to comment on the consensus proposal. In their letter to the Board dated March 30, 2015, they expressed comments related to various proposed requirements which speak to mostly CC responsibilities and which include but are not limited to: the CC providing adequate site conditions for the staging of post-tensioning and reinforcing steel supplies, the CC providing landing platforms for materials placed on multi-story building floors, tasking reinforcing steel contractors with the responsibility for onsite excavation checks by a competent person, ensure written notifications to the reinforcing steel contractor prior to the start of reinforcing steel activities, and requiring the CC to prohibit all other construction processes from taking place in the vicinity of vertical steel erection until they are secured to prevent collapse. The thrust of the CEA's comments and suggested alternatives, appear to be aimed at transferring a number of the proposal's CC responsibilities to the reinforcing steel contractor and placing additional responsibilities upon the reinforcing steel contractor which, as demonstrated by the advisory committee minutes, is contrary to the consensus of that committee and contrary to the requirements set forth in the ANSI A10.9-2013, which is clearly oriented towards the CC, in terms of their responsibilities. The Board staff does not believe that in light of the committee testimony and discussion the arguments set forth in the CEA letter are presently compelling enough to warrant revision of the proposal.

The Board invites interested persons to present statements or arguments with respect to alternatives to the proposed regulation at the scheduled public hearing or during the written comment period.

CONTACT PERSONS

Inquiries regarding this proposed regulatory action may be directed to Marley Hart (Executive Officer) and the back-up contact person, Michael Manieri (Principal Safety Engineer) at the Occupational Safety and Health Standards Board, 2520 Venture Oaks Way, Suite 350, Sacramento, CA 95833; (916) 274-5721.

AVAILABILITY OF STATEMENT OF REASONS, TEXT OF THE PROPOSED REGULATIONS AND RULEMAKING FILE

The Board will have the entire rulemaking file, and all information that provides the basis for the proposed regulation available for inspection and copying throughout the rulemaking process at its office at the above address. As of the date this notice is published in the Notice Register, the rulemaking file consists of this notice, the proposed text of the regulations, the initial statement of reasons and supporting documents. Copies may be obtained by contacting Ms. Hart or Mr. Manieri at the address or telephone number listed above.

AVAILABILITY OF CHANGED OR MODIFIED TEXT

After holding the hearing and considering all timely and relevant comments received, the Board may adopt the proposed regulations substantially as described in this notice. If the Board makes

modifications which are sufficiently related to the originally proposed text, it will make the modified text (with the changes clearly indicated) available to the public at least 15 days before the Board adopts the regulations as revised. Please request copies of any modified regulations by contacting Ms. Hart or Mr. Manieri at the address or telephone number listed above. The Board will accept written comments on any modified regulations for at least 15 days after the date on which they are made available.

AVAILABILITY OF THE FINAL STATEMENT OF REASONS

Upon its completion, copies of the Final Statement of Reasons may be obtained by contacting Ms. Hart or Mr. Manieri at the address or telephone number listed above or via the internet.

AVAILABILITY OF DOCUMENTS ON THE INTERNET

The Board will have rulemaking documents available for inspection throughout the rulemaking process on its web site. Copies of the text of the regulations in an underline/strikeout format, the Notice of Proposed action and the Initial Statement of Reasons can be accessed through the Standards Board's website at <http://www.dir.ca.gov/oshsb>.