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FINAL STATEMENT OF REASONS

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Sections 3207 and 3212
of the General Industry Safety Orders

Fall Protection for Work Around Skylights

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 and sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

Section 3212. Floor Openings, Floor Holes and Roofs.

Existing subsection (e)(2) was proposed to be renumbered to subsection (e)(3). A new subsection (e)(2) was proposed to allow screens installed below skylights (i.e. burglar bars) to serve as fall protection. Subsections (e)(2)(A) and (e)(2)(B) address the strength requirements of skylight screens on the same level as the walking/working surface, and up to two feet below the walking/working surface, respectively. Upon review, Board staff observed that skylight screens installed just above the walking/working surface would not be included in either subsection (e)(2)(A) or subsection (e)(2)(B).

Several skylights are installed with a curb. Depending on the height of the curb and where the screen is installed inside the curb, the screen may be at or above the walking/working surface. To ensure that all skylight screens are covered by the proposed regulation, Board staff proposes to modify the proposed text to include those screens that may be installed at the top of the skylight curb as well as those installed at the base of the curb, and anywhere in between. The modification is necessary to ensure that all screens relied upon for fall protection meet the proposed strength requirements.

Additionally, in response to the comment from Tamara Davis, Certification Assistant, American Architectural Manufacturers Association (AAMA), Skylight/Sloped Glazing Council, the Board proposes to modify Section 3212(e)(2)(D). The currently proposed language of Section 3212(e)(2)(D) requires that screens installed below skylights have grill work with openings less than 12 inches by 12 inches. Ms. Davis pointed out in her comment that many currently installed burglar bars would be disallowed by the 12 x 12 limitation, “such as those with grill work that are narrow yet long.”

During the advisory committee meetings, the committee members discussed the benefits of allowing existing burglar bar installations to serve as fall protection. In an effort to include as many existing installations as feasible and to encourage the installation of screens below skylights for fall protection purposes, the committee members decided that grill work openings should be allowed up to the dimensions of an "opening," as defined in Section 1504 of the Construction Safety Orders. The proposed text will be modified to state that grill work openings are to be less than 12 inches "in the least horizontal dimension," which more accurately reflects the language used in the definition of an "opening." The modification is necessary to ensure that screens installed below skylights are able to serve as fall protection when they meet specific strength requirements.

SUMMARY OF AND RESPONSES TO WRITTEN AND ORAL COMMENTS

I. Written Comments

Mr. David Shiraishi, Area Director, Region IX, OSHA, U.S. Department of Labor, by letter dated October 1, 2015.

Comment:

Mr. Shiraishi commented that Federal OSHA reviewed the proposal and found it not commensurate with federal standards. OSHA recommended adding words to the effect that unless the skylight net or burglar bar was designed to be a fall protection device, the manufacturer of the product should be contacted to obtain approval before the device is installed or used for fall protection. Additionally, OSHA stated that the skylight nets mentioned in Section 3212(e)(6) do not meet the requirements of 29 CFR 1926.502(c)(4), which govern the use of nets for fall protection in construction. Specifically, the proposed Section 3212(e)(6) does not require drop testing of the nets, nor the strength requirements of the federal construction nets, nor do the nets contain a border rope for the webbing, which meet federal requirements.

Response:

The Board does not accept the comments. The Board infers from the comment that Mr. Shiraishi is concerned that burglar bars will be used for an unintended use (fall protection) in addition to their intended use (security). Various California safety and health regulations employ the concept of "intended use." For instance, an employer may only store flammable liquids in cabinets or refrigerators intended for such storage. Additionally, hand tools are restricted to the use for which they are intended. However, in situations where only the intended use is permissible, Title 8 regulations include specific wording to prohibit unintended use.

In the instance of burglar bars as fall protection, federal and state regulations are silent on "unintended use" as it applies to burglar bars; therefore, California is left to determine on its own the conditions under which it will allow burglar bars to be used as fall protection.

Two advisory committee meetings were convened to discuss the present proposal, including the safety measures necessary to allow for the use of burglar bars as fall protection. According to

the minutes of the 2014 meetings, the advisory committee concluded that a qualified person would be able to evaluate the strength capacity of the screen underneath the skylight and determine the screen's ability to serve as fall protection.

The Board asserts that an employer properly utilizing a qualified person will be able to determine whether or not a screen installed below the skylight glazing is appropriate for use as fall protection.

To address the comments on skylight nets, the Board points out that skylight nets are designed, engineered and manufactured to provide fall protection around skylights; therefore, having an employer contact a manufacturer to confirm the net's use would be redundant and unnecessarily burdensome.

In regard to skylight nets meeting the requirements of 29 CFR 1926.502(c)(4), the Board asserts that skylight nets are a unique subclass of nets, which are not comparable to construction nets.

29 CFR 1910.5(c)(1) Applicability of Standards states the following:

> If a particular standard is specifically applicable to a condition, practice, means, method, operation, or process, it shall prevail over any different general standard which might otherwise be applicable to the same condition, practice, means, method, operation, or process. For example, 1915.23(c)(3) of this title prescribes personal protective equipment for certain ship repairmen working in specified areas. Such a standard shall apply, and shall not be deemed modified nor superseded by any different general standard whose provisions might otherwise be applicable, to the ship repairmen working in the areas specified in 1915.23(c)(3).

The quoted federal language states that a more specific standard takes precedence over a more general standard. Using the example in the CFR quoted above, personal protective equipment requirements specific to "certain ship repairmen working in specified areas" take precedence over general standards that may also be applicable to the workers.

In the present case, 29 CFR 1926.502(c)(4) is the more general construction net standard. Because the skylight nets are only for use when working around skylights (and not on bridges, general construction, or anywhere else fall protection may be required, other than around skylights), the specific use of the nets around skylights supersedes the more general requirements of nets used in construction. While construction nets are intended to be used around the perimeter of a structure and must be manufactured to absorb a 400 pound load dropped from up to 30 feet, skylight nets are designed to be placed over skylights and skylight openings and are manufactured to absorb a 400 pound load dropped from 42 inches above the surface of the net, or about waist-high.

The intent of the Board is that the general safety net requirements found in Section 1671 of the Construction Safety Orders not apply to skylight nets, whose use is limited to work around skylights and skylight openings. Skylight nets are intended to be governed by the regulations set forth in the text of the currently proposed amendments.

The Board thanks Mr. Shiraishi for his comments and participation in the Board's rulemaking process.

Tamara Davis, Certification Assistant, American Architectural Manufacturers Association (AAMA), Skylight/Sloped Glazing Council, by electronic mail submission on September 16, 2015.

Comment 1:

Ms. Davis commented that the AAMA is concerned that the limitation on the grill work of a screen underneath a skylight to a 12-inch by 12-inch area would disallow a number of currently installed burglar bars from serving as fall protection, "such as those with grill work that are narrow yet long."

Response 1:

The Board accepts the comment. The advisory committee meeting minutes discussing the matter clearly indicate that the committee intended the grill work to be smaller than an "opening" as defined in Construction Safety Orders, Section 1504, and to potentially include as many existing screens as possible. With a modification to the proposed text, the language now requires the grill work openings to be less than 12 inches "in the least horizontal dimension" as mentioned in the definition of an "opening." As stated elsewhere in the proposed amendments, a qualified person will need to determine whether the screen under the skylight can be used safely as fall protection.

Comment 2:

Ms. Davis stated that the AAMA has concerns with labeling requirements for screens installed above or below skylights. Further, the AAMA asserts that "it is not reasonable to expect the manufacturer to have sufficient information to make any declarations about fitness for use under the unique conditions of any installation." The AAMA opines that "current testing technology does not permit manufacturers to determine the long-term reliability of weathered products," and that any such warranty of strength should not extend past the construction phase. Ms. Davis also suggests that where a skylight itself serves as fall protection, "there should be criteria that ensures the identification of the manufacturer and the skylight's performance" are clearly stated and will not become illegible due to roof exposure.

Response 2:

The Board does not accept these comments. The labeling requirements referred to by the commenter only apply to covers and not screens. Therefore, the Board is not proposing modifications to these requirements at this time.

Regarding Ms. Davis' concerns with manufacturers being responsible for certifying that a skylight will meet the strength requirements of a cover for a period of time beyond the initial installation, the Board refers the commenter to the minutes of the advisory committee meetings

where a manufacturer was present and testified that his company's skylights are warranted to meet the strength requirements for 20 years after the date of manufacture. Advances in skylight system technology and intensive weathering-ability testing are allowing more and more manufacturers to produce products which will meet the strength criteria contained in the proposed amendments.

In regard to labeling criteria, the Board emphasizes that the employer is responsible for obtaining the necessary documentation prior to relying upon the skylight as fall protection. If the employer is unable to identify the skylight's manufacturer, the skylight will not be able to serve as fall protection. However, ANSI 1264.1-2007, *Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace, Floor, Wall and Roof Openings; Stairs and Guardrails Systems* requires in subsection 3.4.1 that skylights contain labels identifying the manufacturer as well as the date of installation. The Board does not see the need to increase regulation in this area at this time because it believes that manufacturers are already voluntarily complying with labeling requirements found in consensus standards like ANSI 1264.1-2007.

Comment 3:

Ms. Davis stated that the AAMA supports adding the definition of 'competent person' to the General Industry Safety Orders. They are also in support of clearly stating that a skylight can meet the requirements of a cover.

Response 3:

The Board thanks Ms. Davis for her comments and participation in the Board's rulemaking process.

Ms. Bernadette Del Chiaro, Executive Director, California Solar Energy Industries Association, by electronic mail submission on September 10, 2015 and Mr. Daniel Leacox, Senior Director, Greenberg Traurig, LLP, by electronic mail submission on September 15, 2015.

Comment:

Ms. Del Chiaro, Mr. Leacox, and a coalition of supporters expressed support for the regulation in its current form. They stated that the proposed amendments "will make rooftop [work] safer by reducing the frequency and duration of work near skylight openings without adequate fall protection. They pointed out that allowing screens to be installed below skylights to serve as fall protection would incentivize the installation of permanent fall protection solutions and that supporting the use of skylight nets as fall protection provides a new option for fall protection where other options may be impractical. Further, they stated that clarifying that skylight domes can serve as covers, as long as they meet specific fall protection strength requirements on the date of intended use, can prevent serious accidents. They also point out that the increase in fall protection options increases the feasibility of compliance and "deals a small but meaningful blow to the underground economy."

Response:

The Board thanks Ms. Del Chiaro, Mr. Leacox, and the coalition of supporters for their comments and participation in the Board's rulemaking process.

Mr. Nigel Ellis, President, Ellis Fall Safety Solutions, LLC, by letter dated September 17, 2015.

Comment:

Mr. Ellis proposed testing skylight screens and covers using a drop test of 300 pounds from three feet above the surface instead of the currently accepted practice of a 400-pound static weight on the weakest one-square-foot of the surface. His sources for the recommendation are from a draft ASTM E06.51.25 standard and an adopted ANSI A10.24-2014 Low Slope Roofing standard. He stated that screens below the skylight should be tested using 300-pound lead weights dropped from five feet above the surface. Finally, he suggested placing two labels on opposite sides of skylight system, which are legible from six feet away and include information on the manufacturer, date of manufacture, and serial number of the skylight.

Response:

The Board does not accept the comment. Although Mr. Ellis' test criteria are likely more protective than the currently accepted practice of static loading, the advisory committee decided not to adopt new testing strategies and instead maintain conformity with the current OSHA and Cal/OSHA regulations. The Board further declines to make the change at this time because the cost impact is likely significant and the advisory committee did not discuss such a change. In regard to labels on skylight, the Board refers Mr. Ellis to "Response 2" to Tamara Davis.

The Board thanks Mr. Ellis for his comments and participation in the Board's rulemaking process.

II. Oral Comments

Oral comments received at the September 17, 2015, Public Hearing in Oakland, California.

Mr. Mike Horowitz, Division of Occupational Safety and Health, in testimony given on September 17, 2015.

Comment:

Mr. Horowitz stated that he was not speaking on behalf of the Division. He said that he supports much of the proposal, but has concerns that building owners and managers, who are aware of the strength levels of skylights on their buildings, are not providing the information to contractors who perform work on the roof of the building. He said that a regulation is needed that will require building owners and managers to maintain such information and provide it to all

contractors working on the roof so that they can take steps to protect themselves and their employees.

Response:

The Board does not accept the comment. Under the proposed text, it will be the employer's responsibility to obtain strength information before relying on a skylight to serve as its own cover. Further, the employer will need to obtain information on the strength of the skylight on the day that the skylight will be relied upon for fall protection. If the building owner maintains such information, he or she can pass it along to the contractor. If the employer is unable to locate the required information, however, it must utilize one of the other methods of protecting its employees from falls through skylights.

The Board thanks Mr. Horowitz for his comments and participation in the Board's rulemaking process.

Mr. Dan Leacox, Attorney of Greenberg Traurig, on behalf of the California Solar Energy Industries Association, in testimony given on September 17, 2015.

Comment:

Mr. Leacox commented in support of the proposal and feels that it will save lives. He stated that an exception to the current fall protection requirements exists when the options are impractical or create a greater hazard. He also stated that enforcement will not be able to fix all non-compliance. He said that the newly proposed options of a screen underneath a skylight and the use of a metal-framed net over the top of the skylight are feasible for many employers and encourage compliance with fall protection standards. He asserted that the proposal will help compliant contractors compete better with contractors who do not comply.

Response:

The Board thanks Mr. Leacox for his comments and participation in the Board's rulemaking process.

Mr. Bill Vail, Sunrun, in testimony given on September 17, 2015.

Comment:

Mr. Vail stated that his organization supports the use of skylight nets in the proposal because it can be difficult for employees to bring materials onto the roof to install guardrails around skylights. He said that skylight nets are a highly protective means of fall protection around skylights and are very cost effective to use.

Response:

The Board thanks Mr. Vail for his comments and participation in the Board's rulemaking process.

Mr. Brian Costa, Solar Craft; Ms. Marti Fisher, CalChamber; and Mr. David Jones, Associated General Contractors; in testimony given on September 17, 2015.

Comment:

Mr. Costa, Ms. Fisher, and Mr. Jones all commented in support of the proposal.

Response:

The Board thanks Mr. Costa, Ms. Fisher, and Mr. Jones for their comments and participation in the Board's rulemaking process.

Ms. Laura Stock, Occupational Safety and Health Standards Board Member, in testimony given on September 17, 2015.

Comment:

Ms. Stock stated that the proposal only explicitly requires training in the section dealing with nets. She also expressed concern with the exception in the regulation and the use of the term "short duration." She stated that the portion of the exception that states "these provisions may be temporarily suspended provided that adequate risk control is recognized and maintained" does not explain why the risk is any less because the length of time that it is used is of short duration.

Response:

The Board notes that because skylight nets are proposed to be a newly accepted form of fall protection, the advisory committee saw a need to provide specific instructions for their use based upon consensus standards, manufacturer recommendations, and best practices. General training requirements apply to all situations where such training is necessary in accordance with an employer's injury and illness prevention program. The lack of specific training requirements in a certain regulation should not be interpreted as a statement that training is not also required in those situations.

The current proposal does not suggest changes to the existing language of the exceptions for the use of fall protection described in Section 3212(e). The existing language has been declared commensurate with Federal OSHA and no concerns have been raised by industry, labor, or Division representatives. Although the risk of a fall is not reduced by an exposure of "short duration," the original authors of the exception presumably recognized that workers are exposed to risk while installing fall protection options like guard rails, covers, and screens around skylight openings. If the duration of an exposure to a fall hazard without guarding is shorter than the time it would take to install guarding, stakeholders have agreed that it does not make sense to

spend time setting up and taking down the fall protection measures. The phrase "these provisions may be temporarily suspended provided that adequate risk control is recognized and maintained" informs employers that even though they may not be required to install the guarding, they are still responsible for providing a safe environment for the employee exposed to the fall. The use of the word "may" indicates that discretion plays a role in whether the fall protection provisions may be set aside or not. Such discretion is also exercised by the Division when ascertaining whether the employer has in fact provided adequate risk control measures to avert a fall. Similar exceptions are found in Construction Safety Orders, Sections 1716.2(g) and 1669(c).

Mr. John Sacco, Occupational Safety and Health Standards Board Member, in testimony given on September 17, 2015.

Comment:

Mr. Sacco stated that the proposal is very good because it offers additional options for compliance that are more feasible than currently available options. He said that the proposal should clarify whether or not the labeling requirements in Section 3212(b) apply to skylights serving as covers. He also said that is was not clear to whom the documentation attesting to a skylight's strength characteristics on the date of use should be given.

Response:

The Board notes that the sentence in the proposed language which reads "Where the skylight itself serves as a cover, the skylight shall be required to meet only the strength requirements of subsection (b)" is intended to inform the regulated public that the elements other than the strength requirements of Section 3212(b) do not apply. The advisory committee agreed that it would be unnecessary to require skylights to be labeled as covers or to require them to be secured against accidental removal or displacement as stated in the remainder of Section 3212(b).

Employers who will rely upon a skylight to serve as its own cover without further guarding are required to obtain documentation from the skylight manufacturer, indicating that the skylight will meet the strength requirements of Section 3212(b) for the date(s) that the skylight will be relied upon for fall protection. Instead of creating a list of individuals or parties that have the right to view such documentation, the advisory committee consensus was to make the documentation available to anyone requesting to see it. Employees, labor representatives, enforcement officers, other employers, and concerned members of the public are among those that could have interest in viewing the documentation. Consequently, the Board believes no further clarification is necessary.

Dr. Robert Blink, Occupational Safety and Health Standards Board Member, in testimony given on September 17, 2015.

Comment:

Dr. Blink stated that confusion exists in the amount of total weight that can be placed on a cover in accordance with Section 3212(b). He said that 400 pounds can be placed on any one square foot of the cover, but the subsection does not state a maximum amount of weight that can be placed on the entire cover. Additionally, in addressing the proposed amendment to allow a screen below a skylight to be used for fall protection, he said that the definition of "qualified person" is nebulous and that it can be difficult to determine who would be a qualified person without clear criteria. He suggested adding language to the proposal to establish a finite level of strength for distances below the walking surface for employers to use in determining the suitability of a screen below a skylight to serve as fall protection.

Response:

With regard to the concern about the lack of a statement indicating the total weight that can be placed on a cover in accordance with Section 3212(b), the Board notes that Section 3212(b) is existing language and not noticed for change, nor has the Board received any request from stakeholders seeking such modification.

Although the subsection is not proposed to be amended at this time, the Board provides the following explanation of the section: Federal language requires that covers be "capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time." In 2003, the Board amended California's language, which had previously mirrored the federal language, to require that the strength of the cover be measured on the weakest one square foot. In other words, the California requirement is the same as the federal requirement, except that instead of the weight being spread evenly on the entire cover as in the federal requirement, California requires that the weight be supported by "any one square foot area of the cover at any time." The one square foot area is representative of the point-force area of the body that would make contact with the cover in the event of an accidental fall.

In regard to the criteria for someone to be considered a qualified person, Section 3207 "Definitions" defines a qualified person as the following:

> Qualified Person, Attendant or Operator. A person designated by the employer who by reason of his training and experience has demonstrated his ability to safely perform his duties and, where required, is properly licensed in accordance with federal, state, or local laws and regulations.

Labor Code 11340.1(a) directs the Board to develop performance standards instead of prescriptive standards "wherever performance standards can be reasonably expected to be as effective and less burdensome" than prescriptive standards. Performance standards benefit California workplaces by "[encouraging] innovation, research, and development of improved means [for compliance]" (See Labor Code 11340(d)). Because of the broad range of skills required to safely perform various jobs in industry, California relies upon the above performance-oriented definition to provide framework for employers trying to comply with the regulation. The Board declines to provide further explanation on the requirement to avoid over

simplification of the matter, unintended consequences, and potential conflicts with the spirit and intent of the Labor Code.

In regard to developing a "finite level of strength" for screens below the walking/working surface, the Board prefers to leave the decision to the judgment of the qualified person, who will consider not only the potential loads that the screen could encounter, but also any other relevant factors. A "one size fits all" value may appear simpler for the regulated public to interpret, but it does not necessarily address all of the elements required for determining and ensuring the suitability of a screen underneath a skylight to serve as fall protection. Leaving the determination up to one "who by reason [of] training and experience has demonstrated" his or her ability to safely perform such a calculation is prudent in the eyes of the Board.

Ms. Barbara Smisko, Occupational Safety and Health Standards Board Member, in testimony given on September 17, 2015.

Comment:

Ms. Smisko asked the Board staff to explain why 400 pounds is used in the existing regulation as specified in existing Section 3212(b).

Response:

At the time the standard was developed, 200 pounds was the value used to represent the weight of the average worker. Using a safety factor of two, covers (and screens) are required to support "the greater of 400 pounds or twice the weight of the employees, equipment and materials that may be imposed on any one square foot area of the cover at any time." Therefore, 400 pounds is the minimum amount of weight that a cover (or screen) can be built to withstand.

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 November 20, 2015.

SUMMARY OF AND RESPONSES TO WRITTEN COMMENTS

Mr. Nigel Ellis, Ph.D., President, Ellis Fall Safety Solutions, LLC, by electronic mail submission on December 8, 2015.

Comment:

Mr. Ellis reasserted the importance of his previous comments by letter dated September 17, 2015 provided during the 45-day comment period. He pointed out that updated consensus standards covering drop tests on skylights have been adopted and he encourages the Board to implement

such standards in California. He also re-emphasized the importance of multiple, legible labels on skylight assemblies.

Response:

The Board does not accept the comments. The 45-day comment period for the original proposal has passed, but the Board acknowledges Mr. Ellis's concerns. As more and more manufacturers adopt the more stringent skylight testing and labeling consensus standards, it is the Board's hope that the topic will be revisited for future action as needed.

The Board thanks Mr. Ellis for his comments and participation in the Board's rulemaking process.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

These standards do not impose a mandate on local agencies or school districts.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed standards. No alternative considered by the Board would be (1) more effective in carrying out the purpose for which the action is proposed; or (2) would be as effective as and less burdensome to affected private persons than the adopted action, or (3) would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law. Board staff were unable to come up with any alternatives or no alternatives were proposed by the public that would have the same desired regulatory effect.