

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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Attachment No. 2

INITIAL STATEMENT OF REASONS**CALIFORNIA CODE OF REGULATIONS**

**TITLE 8: Chapter 4, Subchapter 4, Article 4, New Section 1530.1
of the Construction Safety Orders**

Control of Employee Dust Exposure from Concrete and Masonry Operations**SUMMARY**

This is a proposal to adopt a new section in the Construction Safety Orders of Title 8 to regulate the cutting, grinding, coring, and drilling of concrete and masonry materials. The impetus for proposing this standard is widespread recognition that these operations have significant potential, and probably the greatest potential of the operations conducted in construction settings, to generate overexposure to silica dust when the dust generated by these operations is not effectively controlled.

Uncontrolled employee exposures to dusts generated from the cutting and grinding of concrete and masonry materials have been documented to greatly exceed the allowed levels (Permissible Exposure Limits - PELs) stated in Section 5155. While these exposures can frequently exceed the PEL for total airborne particulates, they are of particular concern because they have also been documented to exceed the PEL for airborne respirable crystalline silica. Respirable silica dust is a long-recognized health hazard that can cause or contribute to debilitating and sometimes fatal respiratory diseases including silicosis, lung cancer, and tuberculosis. It is also believed to result, in the absence of these specific diseases, chronic obstructive pulmonary disease (COPD) and decline in pulmonary function.

The basic approach of the proposed new rule is to require the use of water or local exhaust ventilation systems, together with appropriate training, to control the dust generated by the four general activities listed above when performed with powered tools or equipment. This practice is already widespread in the industry as the principle means of using engineering controls to capture dust and comply with applicable PELs, and this proposed standard is intended to provide a means to enforce the use of this practice by all employers so that all employees and employers are equally protected from those employers who take insufficient action to prevent overexposure.

The applicable PELs in Section 5155 include those for total and respirable crystalline silica, and for total and respirable particulate not otherwise regulated. By incorporating an exception to the requirements for use of dust reduction systems in proposed subsection (c) where applicable PELs are reliably shown not to be exceeded, the rule clarifies how employers are to achieve

compliance with the requirement of Section 5141 to use engineering controls to the extent feasible to comply with applicable PELs, but does not impose requirements for a new level of dust control. The proposal does not affect the use of other measures that may be necessary to comply with the requirements of Section 5141.

This proposal was developed with the assistance of a public advisory meeting process which included two open public meetings held on January 17 and March 26, 2007. These meetings were well-attended by representatives of building contractors and contractor associations, organized labor, and equipment manufacturers.

SPECIFIC PURPOSE AND FACTUAL BASIS OF PROPOSED ACTION

Section 1530.1.

Subsection(a), Scope and Application.

This proposed subsection details the scope and application of the standard. The scope and application are directed to the use of powered tools or equipment to cut, grind, core, or drill concrete or masonry materials. This is necessary to capture all of the major activities by which powered tools generate the most substantial amounts of overall dust and silica dust, silica being a significant constituent of concrete and masonry materials. These are the materials which present the greatest risk of exposure to overall dust and silica dust because of their ability to generate dust when the four listed operations with powered tools or equipment are performed on them. See the study of Croteau, et al. (2002). A number of exceptions are listed to exclude certain activities that fall within the stated scope and application. These operations are proposed to be excluded either because they are believed not to present significant risk of exposure to silica and other dust above applicable PELs or the information on their potential for excessive exposures is limited.

This subsection contains a note clarifying that the proposed standard does not preclude application of other Title 8 requirements applicable to operations covered by the proposed standard. A non-exhaustive list of prominent potentially applicable Title 8 sections is included. This note is necessary to fully inform employers that compliance with the proposed standard does not negate their responsibility to be aware of and to comply fully with other Title 8 sections applicable to control of dust from operations conducted on concrete and masonry materials.

Subsection (b), Definitions.

This proposed subsection contains definitions of three terms: “*concrete or masonry material*,” “*powered tools or equipment*,” and “*dust reduction system*.”

The definition of “*concrete or masonry material*” is necessary to make clear to the regulated public the types of materials falling within the scope and application of the standard as stated in proposed subsection (a) and the evidence an employer must provide to rebut a presumption of application of the standard to such materials. In addition to describing the types of materials covered by the standard, this proposed definition also provides examples of such materials. The definition also provides that unless evidence is presented by the employer that a mixture or material that is stone-like in appearance and texture and otherwise appearing to be within the proposed definition does not contain any of a number of materials known to contain crystalline

silica, the material shall be presumed to be concrete or masonry material and therefore within the scope and application of the standard. This is necessary and appropriate because silica dust is ubiquitous in concrete and masonry materials, and a rebuttable presumption that it is present when the material of concern reasonably appears to be masonry or concrete will avoid the potential for unproductive controversies that might arise from focusing on proof of silica content rather than control of exposure to dust that is overwhelmingly likely to be hazardous if not controlled.

The definition of “*powered tools or equipment*” is necessary to make clear to the regulated public the types of tools and equipment falling within the scope and application of the standard as stated in proposed subsection (a). The proposed definition provides that the term means tools in which the motive force that disrupts concrete or masonry is provided by a source other than human energy. Examples of the types of motive force that will put tools and equipment within the proposed definition are provided.

The definition of “*dust reduction system*” is necessary to make clear to the regulated public the technology required to be applied to operations falling within the scope and application of proposed subsection (a). The proposed definition provides that a dust reduction system, when referred to in the standard, means the application of either water or local exhaust ventilation to reduce airborne dust generated by the use of powered tools or equipment. The proposed definition also states examples of the types of local exhaust ventilation systems that would qualify as a dust reduction system under the standard.

Subsection (c), Control of employee exposures to airborne particulate.

Proposed subsection (c) states the basic requirement around which the entire proposed standard is centered that during operations covered by the standard a dust reduction system be applied to effectively reduce employee exposures to airborne particulate. These engineering controls are the primary methods available to control exposure to dust generated by the covered operations.

Three exceptions to this requirement are provided.

The first is an exception to exclude operations that have been shown to be unlikely to exceed the PEL for silica dust as demonstrated reliably by air sampling data applicable to the specific operation being performed. These operations are excluded because sampling has demonstrated that they do not require the protective measures called for by this proposed standard.

The second exception is for roofing operations with roofing tile, roofing pavers, or similar materials. This exception is based on a conclusion that the prospect of using dust reduction systems appears at this time, considering the currently available technology and lack of information about its compatibility with roofing operations, to raise legitimate concerns about its feasibility, effectiveness, and susceptibility to creating slipping, tripping, and falling hazards when used in conjunction with roofing work on structures where fall distances can be fatal or seriously injurious.

The third exception is for emergency operations of significant importance, as described in the proposed subsection, where the requirements of this subsection could impair the timeliness of

initiation of such an operation. This exception would be applicable only to the first 24 hours of the emergency operation.

Subsection (d), Safety and effectiveness of dust reduction systems.

This proposed subsection is necessary to establish standards for safe and effective operation of the dust reduction systems required by subsection (c).

Subsection (d)(1)

This proposed subsection would require that procedures be implemented to ensure that dust reduction systems maintain their effectiveness for dust reduction throughout the work shift. This subsection is necessary to ensure that measures are taken to ensure that dust reduction system effectiveness does not decline over the course of the work shift. A typical example of such a decline would be when vacuum system filters become loaded with dust to the point where air cannot pass freely through them adequately and the resulting restriction in airflow reduces the vacuum's ability to capture dust generated by the operation.

Subsection (d)(2)

This proposed subsection would require that dust reduction systems used to comply with the requirement of subsection (c) be installed, operated, and maintained in accordance with manufacturer recommendations to the extent they exist. The Board recognizes that some dust reduction systems, particularly water systems, may be fabricated by employers, and thus there may not be any manufacturer recommendations. This subsection is necessary to ensure that dust reduction systems are used as effectively as possible to prevent employee exposures to hazardous dust from operations covered by the proposed standard.

Subsection (d)(3)

This proposed subsection would require that local exhaust ventilation systems be designed, tested, maintained, used, and the waste materials they collect disposed of, in compliance with applicable requirements of Sections 1530 and 5143. This subsection is necessary to ensure the effectiveness with which these systems are used as well as to prevent exposure that could occur by the mishandling of discharged waste.

Subsection (d)(4)

This proposed subsection would require that where electrical tools are used with water as a dust reduction system this be done in accordance with applicable requirements of the Electrical Safety Orders. This requirement is necessary to ensure that electrical tools used with water as a dust reduction system do not create an electrical hazard.

Subsection (e), Training.

Subsection (e)(1), Employee training.

This proposed subsection would require an employer whose operations include using powered tools or equipment to cut, grind, core, or drill concrete or masonry materials to provide training to all employees prior to their assignment to jobs or work areas where the employer will be conducting these operations. In addition to training prior to assignment to covered operations, this subsection would also require that employers conduct the training required by this section at least annually. Training is necessary to ensure that employees understand the need for complying with the requirements of this standard, know how to perform or work compatibly with the employer's specific procedures for achieving compliance, and are given sufficient health-related information to allow them to appreciate how reducing their exposure will reduce their risk of contracting diseases caused or contributed to by exposure to silica dust.

Subsection (e)(2), Supervisor training.

This proposed subsection would require that, prior to engaging in supervision of employees who will be cutting, grinding, drilling, or coring concrete or masonry materials takes place, supervisory employees be provided the same training required for non-supervisory employees as stated in subsection (e)(1). In addition, they would be required to receive training on how to identify the tasks employees will perform that may result in exposure to concrete or masonry dust, and the procedures for implementing the measures used by the employer to reduce these dust exposures. This subsection is necessary to ensure that supervisory personnel are able to carry out fully and effectively their responsibilities to supervise employees in a manner consistent with the requirements of the proposed standard.

Subsection (e)(3), Periodic training.

This subsection requires that employers with operations covered by the proposed standard conduct the training required by the proposed standard at least annually. This subsection is necessary to ensure that employees and supervisory personnel have current information and have not forgotten the subject matter of the training.

DOCUMENTS RELIED UPON

Croteau, G. A., et al. The effect of local exhaust ventilation controls on dust exposures during concrete cutting and grinding activities. *Am. Ind. Hyg. Assoc. J.* 63:458-467. 2002

Erratum for Croteau (2002): *Am. Ind. Hyg. Assoc. J.* 64:172. 2003

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.

DOCUMENTS INCORPORATED BY REFERENCE

None.

REASONABLE ALTERNATIVES THAT WOULD LESSEN ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES

No reasonable alternatives were identified by the Board and no reasonable alternatives identified by the Board or otherwise brought to its attention would lessen the impact on small businesses.

SPECIFIC TECHNOLOGY OR EQUIPMENT

This proposal will not mandate the use of specific technologies or equipment.

COST ESTIMATES OF PROPOSED ACTION

Costs or Savings to State Agencies

For operations within the scope and application of the proposed standard, all employers are required to use dust reduction systems, and provide annual employee and supervisor training.

Exception No 1 in subsection (c) for dust-reduction systems excepts operations reliably shown not to result in employee exposures exceeding applicable Permissible Exposure Limits for particulate listed in Section 5155. Section 5141 requires control of employee exposures to hazardous airborne substances below applicable Permissible Exposure Limits. Therefore, the proposed standard rather than imposing any new or additional requirements for control of employee exposures, provides needed clarification of the existing requirement of Section 5141 with respect to the operations proposed to be covered by the standard.

The training costs associated with this proposal are negligible. Employers are already required to conduct periodic training and toolbox or tailgate safety meetings as required by Title 8 sections 1509 and 3203 (Injury and Illness Prevention Programs), and by Section 5194 (Hazard Communication). The proposed training details can be incorporated into employers' existing training programs with a minimum of cost. The proposed standard does not impose unique requirements on state government. All state, local and private employers will be required to comply with the prescribed standards.

Impact on Housing Costs

The Board has made an initial determination that this proposal will not significantly affect housing costs.

Impact on Businesses

The Board has made a determination that this proposal will not result in a significant, statewide adverse economic impact directly affecting businesses, including the ability of California

businesses to compete with businesses in other states. Minimal costs may be incurred to upgrade existing training for the specifics that would be required by the proposed standard.

Cost Impact on Private Persons or Businesses

The proposed standard may result in a small increase in training costs in order for employers to properly train their employees in accordance with the training requirements of the proposed standard. Employers are already required to conduct periodic training and toolbox or tailgate safety meetings as required by Sections 1509 and 3203 (Injury and Illness Prevention Programs), and training on hazardous substances as required by Section 5194 (Hazard Communication). The proposed training details can easily be incorporated into employers' existing training programs with a minimum of cost.

Costs or Savings in Federal Funding to the State

The proposal will not result in costs or savings in federal funding to the state.

Costs or Savings to Local Agencies or School Districts Required to be Reimbursed

No costs to local agencies or school districts are required to be reimbursed. See explanation under "Determination of Mandate."

Other Nondiscretionary Costs or Savings Imposed on Local Agencies

This proposal does not impose nondiscretionary costs or savings on local agencies.

DETERMINATION OF MANDATE

The Occupational Safety and Health Standards Board has determined that the proposed standard does not impose a local mandate. Therefore, reimbursement by the state is not required pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code because the standard does not constitute a "new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution."

The California Supreme Court has established that a "program" within the meaning of Section 6 of Article XIII B of the California Constitution is one which carries out the governmental function of providing services to the public, or which, to implement a state policy, imposes unique requirements on local governments and does not apply generally to all residents and entities in the state. (County of Los Angeles v. State of California (1987) 43 Cal.3d 46.)

The proposed standard does not require local agencies to carry out the governmental function of providing services to the public. Rather, the standard requires local agencies to take certain steps to ensure the safety and health of their own employees only. Moreover, the proposed standard does not in any way require local agencies to administer the California Occupational Safety and Health program. (See City of Anaheim v. State of California (1987) 189 Cal.App.3d 1478.)

The proposed standard does not impose unique requirements on local governments. All state, local and private employers will be required to comply with the prescribed standard.

EFFECT ON SMALL BUSINESSES

The Board has determined that the proposed amendments may affect small businesses; however, no economic impact is anticipated.

ASSESSMENT

The adoption of the proposed standard will neither create nor eliminate jobs in the State of California nor result in the elimination of existing businesses or create or expand businesses in the State of California.

ALTERNATIVES THAT WOULD AFFECT PRIVATE PERSONS

No reasonable alternatives have been identified by the Board or have otherwise been identified and brought to its attention that 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 proposed action.