

Respirable Crystalline Silica Standard

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Background:

On March 25, 2016, the Occupational Safety and Health Administration (OSHA) issued their final standard on respirable crystalline silica (29 CFR 1926.1153). The standard applies to all occupational exposures to respirable crystalline silica in construction work and sets a new Permissible Exposure Limit (PEL) of 50 micrograms of respirable crystalline silica per cubic meter of air ($50.0 \mu\text{g}/\text{m}^3$) as an 8-hour Time-Weighted Average (TWA). The standard also establishes an Action Level (AL) of $25 \mu\text{g}/\text{m}^3$ as an 8-hour TWA.

Common construction tasks that can generate silica dust exposures include cutting, sanding, grinding, fracturing, or abrading silica containing materials; including using masonry saws, grinders, drills, jackhammers, powered chipping tools, operating vehicle mounted drilling rigs, milling, operating crushing machines, and using heavy equipment for demolition or earthmoving. (NOTE: Sanding of Drywall has been determined to be an activity that generates low levels of silica exposure; however, contractors may nonetheless want to conduct exposure assessments to ensure compliance with the new standard.)

Not covered under the standard are tasks and operations where exposures will be low – below the AL of $25 \mu\text{g}/\text{m}^3$ as an 8-hour TWA – under any foreseeable conditions.

Summary:

- **Specified Exposure Control Methods** – The standard includes Table 1, which lists 18 construction tasks that have the potential to generate exposures to silica above the new PEL. The Table contains engineering controls, work practices, and respiratory protection (in some instances) which all must be fully and properly implemented to be in compliance with Table 1. Contractors who follow the identified controls will not be required to conduct exposure monitoring and will be deemed in compliance with the standard's PEL and the respiratory protection requirements (assuming respiratory protection required). As part of implementing Table 1 there are additional requirements for work performed indoors or in enclosed areas, for tasks performed using wet methods, and for measures that include enclosed cabs or booths.
- **Alternative Exposure Control Methods** – For tasks NOT listed in Table 1 or where a contractor does not fully and properly implement the requirements listed for tasks in Table 1, OSHA has established “alternate exposure control methods”. First, OSHA requires contractors to ensure no employee is exposed above the PEL. To accomplish this OSHA requires exposure assessments of employees who are, or may be reasonably expected to be, exposed to silica at or above the AL. The exposure assessment can be accomplished by; 1) using a combination of air monitoring data or objective data that sufficiently characterizes employee exposure to silica, or 2) conducting initial and reassessment air monitoring according to a schedule OSHA established. A reassessment of exposures is required when there is a change in production, process, control equipment, personnel, or work practices that may result in new or additional exposures at or above the AL. Employees must then be individually notified in writing of the results of the air monitoring within five (5) working days, or the results posted in an area accessible to all affected employees. If the results show exposures above the PEL, the notification must include the steps taken to reduce exposures to or below the PEL. Employees or their designated representatives must also be provided the opportunity to observe any monitoring of employee exposures. This section also requires contractors to implement engineering and work practice controls to reduce exposures below the PEL, or to the lowest feasible levels, before providing respirators. For abrasive blasting operations conducted using silica containing material, or abrasive blasting conducted on substances that contain silica, contractors must follow other applicable OSHA requirements such as the ventilation standard (1926.57).

If you have any questions contact Kevin Cannon

Phone: (703) 837-5410 Fax: (703) 837-5407 Email: cannonk@agc.org.

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- **Respiratory Protection** – When respiratory protection is required by the standard, respirators must be provided to each affected employee by the contractor in accordance with the General Industry Respiratory Protection Standard (1910.134). Respiratory protection is required when specified in Table 1; for tasks not listed in Table 1; or when the engineering controls, work practices, and respiratory protection contained in Table 1 are not fully and properly implemented. Additionally, respiratory protection is required where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls; where exposures exceed the PEL during tasks such as certain maintenance and repair for which engineering and work practice controls are not feasible; and during tasks for which an employer has implemented all feasible engineering and work practice controls and is still unable to reduce exposures to or below the PEL. Contractors whose employees are assigned respirators must develop and implement a written Respiratory Protection Program in accordance with 1910.134.
- **Housekeeping** – The standard prohibits contractors from dry sweeping or dry brushing where this could contribute to employee exposure to silica unless wet sweeping, HEPA-filtered vacuuming or other methods that reduce the likelihood of exposure are not feasible. The standard also prohibits the use of compressed air to clean clothing or surfaces where doing so could contribute to employee exposure to silica, unless the compressed air is used in conjunction with a ventilation system that can effectively capture any dust created or no alternative method is feasible.
- **Written Exposure Control Plan** – The standard requires contractors to establish and implement a written Exposure Control Plan (ECP) that; contains a description of the tasks that involve exposure to silica; the engineering controls, work practices, and respiratory protection used to limit exposure to silica for each identified task; housekeeping measures used to limit exposure to silica; and procedures used to restrict access to work areas (when necessary) to minimize the number of employees exposed to silica and their level of exposure – including silica dust generated by other contractors. This section of the standard also requires the designation of a competent person to make frequent and regular inspections of the jobsite, materials, and equipment to implement the written ECP. The ECP must be reviewed and evaluated annually and updated as necessary. Finally, the ECP must be made available for examination and copying, upon request, to each employee covered by the standard, their representative, OSHA, and NIOSH.
- **Medical Surveillance** – The standard requires contractors to offer medical surveillance – at no cost and at a reasonable time and place – for employees who will be required to wear a respirator for 30 or more days per year. The medical examination and required procedures must be performed by a physician or other licensed health care professional (PLHCP) as defined by the standard. The initial/baseline examination must be conducted within 30 days after initial assignment unless the employee has had a medical examination that meets the requirements of this standard within the last three years. The initial examination must consist of a medical and work history with an emphasis on past, present, and anticipated exposure to silica, dust, and other agents affecting the respiratory system. The initial examination must also include any history of respiratory system dysfunction, including any signs and symptoms of respiratory disease, history of tuberculosis (TB), and smoking status and history.

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- **Medical Surveillance (cont.)** – The initial examination will also include a physical examination with a special emphasis on the respiratory system, a chest x-ray, pulmonary function test administered by a spirometry technician with a current certification from a NIOSH-approved spirometry course, testing for latent tuberculosis (TB), and any other tests deemed appropriated by the PLHCP.

The standard also requires periodic examinations by a PLHCP every three years or more if recommended by the PLHCP. The periodic examinations must include all procedures required by the initial examination except for testing for latent TB. Contractors must provide the PLHCP with a copy of the silica standard and a description of the employee's former, current, or anticipated duties as they relate to his/her exposure to silica. Contractors must also provide the PLHCP with the employee's former, current, and anticipated levels of exposure to silica. A description of the personal protective equipment (PPE) that is used, or will be used, by the employee, including when and for how long he/she has used or will use the equipment. If the contractor has information from records of employment-related medical examinations previously provided to the employee, this information must be provided to the PLHCP as well. After the medical examination, the contractor must ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written report within 30 days of the medical examination. The contractor must also obtain a written medical opinion from the PLHCP within 30 days of the medical examination. If the PLHCP's written medical opinion indicates the employee should be seen by a specialist, the contractor must make a medical examination available within 30 days after receiving the opinion.

- **Communication of Respirable Crystalline Silica Hazards to Employees** – The standard requires contractors to include silica in their Hazard Communication (HazCom) programs ensuring that each employee has access to labels on containers and Safety Data Sheets. Contractors are also required to train employees covered by the standard on health hazards associated with silica exposure, tasks/operations that could result in exposure to respirable silica, measures the contractor has implemented to protect employees from exposure to silica, and the contents of the new standard. The training program must also include the identity of the competent person designated to implement the written ECP, and the purpose and description of the medical surveillance program. Contractors are also required to make a copy of the new standard readily available to each covered employee at no cost.
- **Recordkeeping** – The standard requires contractors to make and maintain accurate records of air monitoring data, objective data used for exposure assessments, and records pertaining to the medical surveillance requirements. All information required to be maintained by this section shall be in accordance with 1910.1020.
- **Effective Dates** – The standard becomes effective on June 23, 2016. However, the construction industry has been provided one year – until June 23, 2017 – to comply with all provisions except for the requirements for methods of sample analysis.