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#153 – Proposed silica standard for construction

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Proposed Rule Scheduled to be Published by May 1, 2011

OCCUPATIONAL EXPOSURE TO CRYSTALLINE SILICA IN CONSTRUCTIONS

SCOPE AND APPLICATION

- ✘ **Option 1** - This section applies to all occupational exposures to respirable crystalline silica in construction operations covered under 29 CFR Part 1926.
- ✘ **Option 2** - This section applies to all workplaces that engage in the following construction operations:
 - + Abrasive blasting using blasting agents that contain crystalline silica, or abrasive blasting on substrates that contain crystalline silica.
 - + Cutting, sanding, drilling, crushing, grinding, milling, sawing, scabbling, scraping, mixing, jackhammering, excavating, or distributing of materials that contain crystalline silica. Such materials include, but are not limited to, concrete, brick, block, mortar, rock, and soils.

DEFINITIONS

- ✘ **Action Level** means a concentration of airborne respirable crystalline silica of calculated as an eight (8)-hour time-weighted average (TWA), without regard to the use of respirators
 - + [Note: For a PEL of 100 ug/m³, there will be an action level of 50 ug/m³.
 - + For a PEL of 75ug/m³, there will be an action level of 40 ug/m³.
 - + For a PEL of 50ug/m³, there will be no action level; requirements that are triggered by the action level in this draft would instead be triggered by the 50 ug/m³ PEL.] could be 25 ug/m³.

DEFINITIONS

- ✘ **Competent Person**, for the purpose of this section, means one:
 - + who has the knowledge to identify and evaluate existing and predictable crystalline silica hazards in the workplace; and
 - + Who has authorization to take corrective measures to control employee exposure to crystalline silica.

DEFINITIONS

- ✘ **Employee exposure** means exposure to airborne respirable crystalline silica that occurs or would occur if the employee were **not using** respiratory protection.
- ✘ **Health care professional (HCP)** is an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the health care services required by paragraph (j) of this section.

PERMISSIBLE EXPOSURE LIMIT (PEL).

- ✘ The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica greater than [50/75/100] ug/m³, calculated as an eight (8)-hour TWA.

METHODS OF COMPLIANCE

- ✘ Compliance hierarchy
 - + The employer **shall implement engineering controls and work practice** to reduce and maintain employees exposures to or below the PEL, except when the employer can **demonstrate** that such controls are not feasible.
 - + Whenever feasible engineering controls and work practices that can be provided are not sufficient to reduce employee exposure to or below the PEL, the employer must use them to reduce employee exposure to the lowest levels achievable by those controls and **must supplement them by use of respiratory protection** in accordance with the requirements of paragraph (g) of this section and 29 CFR 1926.103.

METHODS OF COMPLIANCE

- ✘ Specific Operations
 - + For the operations listed in Table 1, if the employer implements the engineering controls, work practices, and respiratory protection described in Table 1, the employer shall be considered to be in compliance with paragraph (d) (1) of this section, **and is not required to monitor employee exposures in accordance with paragraph (f) of this section.**
 - + New Table should include <4 hours/day and >4 hours/day tasks.
 - + For the purposes of complying with the rest of this section, the employer must presume that any employee performing an operation listed in Table 1 is exposed above the action level (or PEL if the PEL is 50 $\mu\text{g}/\text{m}^3$), unless the employer can demonstrate otherwise in accordance with the exposure assessment requirements of paragraph (f).

METHODS OF COMPLIANCE

- ✘ Competent person
 - + The employer shall designate a competent person at each worksite to ensure that the requirements of this section are met.
 - + The employer shall require and ensure that the competent person evaluates workplace exposures and the effectiveness of existing controls, and implements corrective measure, including the temporary stoppage of work, to ensure that employees are not exposed to crystalline silica in excess of the PEL.

METHODS OF COMPLIANCE

- ✘ Dust controls
 - + The employer shall:
 - ✘ Maintain equipment, water based dust control systems, and filtration systems used to control respirable crystalline silica to ensure they are effectively reducing exposures.
 - ✘ Evaluate the equipment;
 - ✘ Measure effectiveness of equipment; and
 - ✘ Promptly fix any deficiencies found.

METHODS OF COMPLIANCE

- ✘ Unacceptable practices.
 - + The employer may not use **employee rotation** as a means of complying with the requirement.
 - + The employer may not use compressed air, brushing, or dry sweeping to clean floors and other surfaces where the crystalline silica-containing debris has accumulated.

METHODS OF COMPLIANCE

- ✘ Abrasive Blasting.
 - + The employer shall comply with the requirements of 29 CFR 1926.57 (ventilation) and 29 CFR 1926.103 (respirator use), where abrasive blasting operations are conducted using crystalline silica-containing blasting agents, or where abrasive blasting operations are conducted on substrates that contain crystalline silica.

REGULATED AREAS

- ✘ Does not require regulated areas but considering including a written exposure control plan to minimize the number of workers exposed.
 - + The plan would include provisions to ensure that only authorized employees are allowed in the proximity of the operation, that the authorized employees are properly equipped with respirators, and that other employers present at the worksite are appropriately informed of the presence of a silica exposure hazard.

EXPOSURE ASSESSMENT

- ✘ Each employer shall assess the exposure of employees who are or may reasonably be expected to be exposed to respirable crystalline silica in excess of the action level (or PEL if the PEL is 50 $\mu\text{g}/\text{m}^3$).
- ✘ The employer is not required to perform an exposure assessment for either of the following:
 - + Employees engaged in abrasive blasting operations provided:
 - ✘ The employee is using a type of CE abrasive blasting respirator, and
 - ✘ The employer is complying with the requirements of 29 CFR 1926.57, 29 CFR 1926.103, and paragraph (d) of this section, or
 - + Employees engaged (in compliance with) in operations listed in Table 1.

EXPOSURE ASSESSMENT

- ✘ The employer shall determine employee exposures from one of more breathing zone air samples that reflect the full-shift exposures and an 8-hour TWA exposure of the employee.
 - + Representative sampling is OK

EXPOSURE ASSESSMENT

- ✘ Initial exposure assessment.
 - + Each employer shall perform initial monitoring of employees who are, or may reasonably be expected to be, exposed to airborne concentrations of respirable crystalline silica at or above the **action level** (or PEL if the PEL is 50 $\mu\text{g}/\text{m}^3$).
 - + The employer may rely on existing exposure monitoring data to satisfy this initial monitoring requirement where the employer has:
 - ✘ Exposure data meeting the requirements of this section that were obtained within the **last 12 months**; or
 - ✘ **Objective data** that demonstrates that crystalline silica **is not capable of being released** in airborne concentrations at or above the action level (or PEL if the PEL is 50 $\mu\text{g}/\text{m}^3$) under the expected conditions of processing, use, or handling.

EXPOSURE ASSESSMENT

- ✘ **Option 1**
 - + The employer shall repeat monitoring at least **quarterly** if the initial or subsequent monitoring reveals that employees are exposed above the PEL.
- ✘ **Option 2**
 - + Where the initial assessment required by paragraph (f) (2) reveals employee exposures above the, the employer must conduct periodic exposure monitoring as necessary to ensure proper selection of engineering controls, work practices, and respiratory protection so that employees are not exposed above the PEL.

EXPOSURE ASSESSMENT

- + Additional monitoring whenever there has been a change in the production, process, control equipment, personnel, or work practices that may result in new or additional exposures above the action level (or PEL if the PEL is 50 $\mu\text{g}/\text{m}^3$) or when the employer has any reason to suspect that a change may result in new or additional exposures above the action level (or PEL if the PEL is 50 $\mu\text{g}/\text{m}^3$).

EXPOSURE ASSESSMENT

- + Method of monitoring and sampling analysis.
 - × Follow procedures specified in sampling methods for respirable crystalline silica published by OSHA, NIOSH, or other nationally recognized standards-setting organization.
 - × Evaluated by either x-ray diffraction (XRD) or infrared (IR) spectroscopy using one of the procedures specified in analytical methods for crystalline silica published by OSHA, NIOSH, or other nationally recognized standards-setting organization.
 - × The employer must have samples analyzed by compliant laboratory.

EXPOSURE ASSESSMENT

- + Employee notification of monitoring results.
 - × Within 15 working days after the receipt of the results in writing individually or by posting.
 - × The written notification shall contain the corrective action being taken by the employer to reduce employee exposure to or below the PEL wherever monitoring results indicate that the PEL has been exceeded.

RESPIRATORY PROTECTION

- × For employees who use respirators required by this section, the employer shall establish a respiratory protection program in accordance with 29 CFR 1926.103.
- × The employer shall ensure that respirators are used as follows:
 - + When employees are working in regulated areas;
 - + During work operations for which feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below PEL;
 - + During periods when engineering controls and work practices are being installed, repaired, or implemented; or
 - + When an employee requests a respirator.

RESPIRATORY PROTECTION

- × For employees engaged in abrasive blasting operations involving crystalline silica, the employer must provide and ensure that employees use a Type CE, continuous flow respirator (hood or helmet) in accordance with 29 CFR 1926.57.
- × The employer must select the appropriate respirator in accordance with the respirator selection table in 29 CFR 1926.103.

PROTECTIVE WORK CLOTHING

- × For employees exposed to respirable crystalline silica **above the PEL**, the employer shall provide either new disposable protective clothing each day or a means for employees to vacuum excess dust from contaminated work clothing.
- × The employer shall ensure that employees remove contaminated disposable protective clothing and place such clothing in containers or bags in a manner that minimizes employee exposure to airborne respirable crystalline silica.

PROTECTIVE WORK CLOTHING

- × The employer shall prohibit the removal of crystalline silica from clothing by blowing or shaking.

HOUSEKEEPING AND HYGIENE PRACTICES

- ✘ The employer shall ensure that accumulations of crystalline silica-containing debris are removed using vacuums equipped with a HEPA filter or equally effective filtration or dust collection methods.
- ✘ The employer shall prevent the accumulation of crystalline silica-contaminated water that could dry and result in a residue that could contribute significantly to employee exposure to airborne respirable crystalline silica.
- ✘ In accordance with the requirements of 29 CFR 1926.51 (f)(1), the employer shall provide adequate washing facilities in close proximity to the worksite.

EMPLOYEE HEALTH SCREENING

- ✘ The employer must offer health screenings to all affected employees who are occupationally exposed to respirable crystalline silica **at or above the action level** (or PEL if the PRL is 50ug/m³).
 - + The employer must provide the health screening at no cost to the employee and at a reasonable time and location.
 - + The employer shall ensure that all health screening procedures are performed by an HCP.

EMPLOYEE HEALTH SCREENING

- ✘ The employer shall make the health screening available to each affected employee as follows:
 - + Pre-placement health screening (unless done in last 12 months).
 - + Periodic health screening (Annually and whenever as employee reports symptoms that could be related to respirable crystalline silica exposure.
 - + Termination of employment (within 30 days of termination)

EMPLOYEE HEALTH SCREENING

- ✘ The employer shall ensure that pre-placement screening includes the following:
 - ✘ An occupational and health history
 - ✘ A physical examination with special emphasis on the respiratory system performed by an HCP who has demonstrated knowledge of silica-related disease or pneumoconiosis by completion of course work emphasizing clinical evaluation and diagnosis of silica-related disease.
 - ✘ A chest X ray (posterior/anterior view; 14x17 inches) interpreted and classified according to the International Labor Organization (ILO) guidelines by a board certified radiologist or a NIOSH-certified "B" reader, or an equivalent diagnostic study.
 - ✘ A pulmonary function test
 - ✘ Any other tests deemed appropriate by the HCP.

EMPLOYEE HEALTH SCREENING

- + The employer shall ensure that periodic health screening includes the following:
 - ✘ Annual review and updating of the occupational and health history
 - ✘ An annual physical examination
 - ✘ **Option 1**
 - ✘ A chest X ray (posterior/anterior view; 14x17 inches) interpreted classified according to ILP guidelines by a board certified radiologist or a NIOSH-certified "B" reader, or an equivalent diagnostic study, **every three years** or as deemed necessary by the HCP.
 - ✘ **Option 2**
 - ✘ A chest X ray (posterior/anterior view; 14x17 inches) interpreted classified according to ILP guidelines by a board certified radiologist or a NIOSH-certified "B" reader, or an equivalent diagnostic study, according to the **following frequency** or as deemed necessary by the HCP.
- | Years of cumulative exposure | Frequency |
|------------------------------|---------------|
| 0-15 years | Every 3 years |
| 15-20 years | Every 2 years |
| >20 years | Every year |
- ✘ Any other tests deemed appropriate by the HCP.

EMPLOYEE HEALTH SCREENING

- ✘ Information provided to the HCP. The employer must provide the HCP with the following information:
 - + A description of the employee's job as it related to silica exposure;
 - + A copy of paragraph (j);
 - + Results from the monitoring of the employee's exposure to respirable crystalline silica;
 - + The results of the employee's previous silica-related health screening, including any previous written opinions; and
 - + A description of any personal protective equipment used or to be used by the employee.

EMPLOYEE HEALTH SCREENING

- ✘ The employer must promptly obtain a written opinion from the HCP after completion of the screening, and must provide the employee a copy of the HCP's written opinion within 15 days of receiving it. The written opinion must include:

EMPLOYEE HEALTH SCREENING

- ✘ Medical referrals.
 - + If the HCP determines that the employee should be examined by a pulmonary specialist, the employer must make available to the employee one pulmonary specialist of the employee's choosing from the referral list.
 - + The employer must provide for an examination of the employee by the pulmonary specialist at no cost to the employee and at a reasonable time and place.
- ✘ The **employer** must report all cases of silica-related disease identified by the pulmonary specialist to the Screening and Surveillance Branch of NIOSH.

HAZARD COMMUNICATION

- ✘ The employer shall ensure that crystalline silica is addressed under the hazard communication program required by 29 CFR 1926.59, including labels on containers, material safety data sheets, and information and training. The employer shall ensure that the labels include at least the following information:
 - + DANGER
 - + CRYSTALLINE SILICA
 - + CAUSES CANCER AND LUNG DISEASE

HAZARD COMMUNICATION

- ✘ **Employee information and training.**
 - + The employer shall provide information and training for each affected employee prior to, or at, the time of initial assignment to a job involving potential exposure to crystalline silica.
 - + The employer shall ensure that information and training is presented in a manner that is understandable to employees.

HAZARD COMMUNICATION

- ✘ In addition to the information required under the Hazard Communication Standard at 29 CFR 1926.59:
 - + The employer shall inform each affected employee of the requirements of this section, and how to access or obtain a copy of it in the workplace.
 - + Wherever an employee's exposure to airborne concentrations of crystalline silica exceeds, or can reasonably be expected to exceed the action level (or PEL if the PEL is 50ug/m³), the employer shall inform the affected employee of the quantity, location, manner of use, release and storage of crystalline silica and the specific operations in the workplace that could result in exposure to crystalline silica, particularly noting where exposures may be above the PEL.
- ✘ The employer shall re-train each affected employee as necessary to ensure that each employee exposed above the action level maintains the requisite understanding of the principles of safe use and handling of crystalline silica in the workplace.

RECORDKEEPING

- ✘ Historical or objective data.
- ✘ Exposure measurement records.
- ✘ Health Screening Records.
- ✘ Respirator Fit Test Records.
- ✘ Record retention.
- ✘ Availability of records.