OSHA’S RULE ON CRYSTALLINE SILICA: TRAINING ON WHAT YOU NEED TO KNOW
Bradford T. Hammock, Jackson Lewis P.C.

OVERVIEW
• Health Effects of Silica Exposure
• Controls and PPE Requirements
• Written Exposure Control Plan Requirements
• Medical Surveillance Requirements
• Training Requirements
• Recordkeeping Requirements

WHAT IS SILICA?
• Crystalline silica is a common mineral that occurs in many naturally occurring and man-made materials used at construction sites.
• Respirable crystalline silica is very small particles – typically at least 100 times smaller than ordinary sand found on beaches or playgrounds.
• Inhaling very small crystalline silica can be hazardous to the employee’s health.

WHEN IS EXPOSURE LIKELY?
• Respirable crystalline silica is generated by high-energy operations on:
  • Stone
  • Rock
  • Concrete
  • Brick
  • Block
  • Mortar
  • Cement
  • Tile

AM I COVERED BY THE NEW RULE?
All occupational exposures to respirable crystalline silica in construction work are covered, unless employee exposure will remain below 25 micrograms per cubic meter of air (25 μg/m³) as an 8-hour time-weighted average (TWA) under any foreseeable conditions. “Any foreseeable conditions” refers to situations that can reasonably be anticipated.
  • E.g., Failure of engineering controls is reasonably foreseeable

WHEN MUST I COMPLY WITH THE NEW RULE?
• Must comply with all requirements, except requirements for methods of sample analysis, by June 23, 2017.
• Must comply with the requirements for methods of sample analysis by June 23, 2018.
WHAT IS TABLE 1?

- Table 1 matches common construction tasks with approved dust control methods and respirators.
- The employer must fully and properly implement the engineering controls, work practices, and respiratory protection specified when engaged in a task identified in Table 1.
- Employers who fully and properly implement controls for tasks on Table 1 do not have to:
  - Comply with the PEL.
  - Conduct exposure assessments for employees engaged in those tasks.

### Equipment/Task

<table>
<thead>
<tr>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protection and minimum assigned protection factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desired time/shift</td>
<td>≤ 4 hours/shift</td>
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</tbody>
</table>

#### (i) Stationary masonry saws

- Use saw equipped with integrated water delivery system that continuously feeds water to the blade.
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions.

- None
- None

#### (ii) Handheld power saws (any blade diameter)

- Use saw equipped with integrated water delivery system that continuously feeds water to the blade.
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions:
  - When used outdoors
    - None
    - APF 10
  - When used indoors or in an enclosed area
    - APF 10
    - APF 10

#### (iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)

For tasks performed outdoors only:

- Use saw equipped with commercially available dust collection system.
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions.
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.

- None
- None

#### (iv) Walk-behind saws

- Use saw equipped with integrated water delivery system that continuously feeds water to the blade.
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions.

- None
- None

- When used indoors or in an enclosed area
    - APF 10
    - APF 10

NOTES TO TABLE 1...

When implementing the control measures specified in Table 1, each employer shall:

- For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust.
- For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust.
**ADDITIONAL NOTES TO TABLE 1 ...**

When implementing the control measures specified in Table 1, each employer shall:

- For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:
  - (A) Is maintained as free as practicable from settled dust;
  - (B) Has door seals and closing mechanisms that work properly;
  - (C) Gaskets and seals that are in good condition and working properly;
  - (D) Is under positive pressure maintained through continuous delivery of fresh air;
  - (E) Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 μm range (e.g., MERV-16 or better); and
  - (F) Has heating and cooling capabilities.

**RESPIRATORS**

- **Respirators:** The employer must ensure that respirators are worn where specified by Table 1.
- Respirator requirements in Table 1 are divided by task duration of 4 hours or less or greater than 4 hours.

**“DURATION OF THE TASK”**

- **Respirators:** The requirement to provide respirators is based on the anticipated duration of the task.
- Determining the duration of the task:
  - Employers must make a good-faith judgment of the task’s anticipated duration over the work shift based on previous experience and all other available information.
  - If an employer anticipates that a task will take 4 hours or less, but unforeseen difficulties will extend the task duration beyond 4 hours, the employer is required to provide the listed respiratory protection as soon as it becomes evident that the duration of the task may exceed the 4-hour limit.

**HOW DO I CALCULATE A TASK DURATION?**

- Task duration time starts when the operator begins using the tool, and continues to be counted until the task is complete. This time includes intermittent breaks in tool usage and clean-up.
- **EXAMPLE**
  - E.g., an employee cuts and places bricks, ten at a time, for four hours and then spends 30 minutes cleaning up the saw and emptying dust collector. The total task is 4 hours and 30 minutes.
  - Respirator use would be based on the > 4 hour/shift (even though the actual cutting was less than 4 hours).

**HOW DO I CALCULATE A TASK DURATION? (CONT’D)**

- Tasks that are performed multiple times per day, during distinct time periods, should be counted as separate tasks and then the time added together.
  - **EXAMPLE**
    - E.g., an employee cuts brick for 15 minutes, lays brick for two hours before returning to cut more bricks for 30 minutes. The total task duration is 45 minutes.
    - Respirator use would be based on ≤ 4 hour/shift.

**WHAT IF THE EMPLOYEE PERFORMS MORE THAN ONE TYPE OF TASK UNDER TABLE 1?**

- Where an employee performs more than one task on Table 1 during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection is the protection specified for more than four hours.

- If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection is the protection specified for less than four hours.
WHAT IF I DON’T USE TABLE 1?

• For tasks not listed in Table 1, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1, the employer must:
  • Ensure that exposures are below the permissible exposure limit (PEL)
  • Conduct an exposure assessment
  • Ensure methods of compliance (e.g., controls and PPE)

WHAT IS THE NEW PEL?

PEL: The employer must ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 µg/m³, calculated as an 8-hour TWA.

WHAT OPTIONS DO I HAVE FOR EXPOSURE MONITORING?

Exposure assessment: The employer must assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level (25 µg/m³) in accordance with either the performance option or the scheduled monitoring option.

WHAT IS THE PERFORMANCE OPTION?

Performance option: The employer must assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

Air Monitoring Data: Any air monitoring results that the employer has done to meet the requirements of the silica standard.

WHAT IS THE SCHEDULED MONITORING OPTION?

Scheduled monitoring option: The employer should perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area.

• Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees.
• In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

WHAT IS THE PERFORMANCE OPTION? (CONT’D)

Objective Data:
• Must demonstrate employee exposure associated with a particular product or material or a specific process, task, or activity.
• Must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices and environmental conditions in the employer’s current operations.
• Must reflect the exposure on each shift, for each job classification and in each work area.
SCHEDULED MONITORING SCHEDULE

If initial exposure monitoring results indicates:

- Below the AL: No additional monitoring needed
- At or above the AL: Repeat exposure monitoring within 6 months
- At or about the PEL: Repeat exposure monitoring within 3 months

If two non-initial monitoring results (taken 7 or more days apart) indicates:

- Below the AL: Monitoring can be discontinued
- At or above the AL: Repeat exposure monitoring within 6 months
- At or about the PEL: Repeat exposure monitoring within 3 months

Reassess exposures whenever a change in production, process, control equipment, or work practices may reasonably be expected to result in a new or higher exposure.

ARE THERE EMPLOYEE NOTIFICATION REQUIREMENTS?

Employee notification of assessment results:

- Within five working days after completing an exposure assessment, the employer shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees.

ARE THERE EMPLOYEE NOTIFICATION REQUIREMENTS? (CONT’D)

Employee notification of assessment results:

- Whenever an exposure assessment indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being to be taken to reduce employee exposure to or below the PEL.
- If controls are not feasible or the employer needs more than 5 days to identify the right engineering controls, respiratory protection is the corrective action that should be described in the written notification and provided to employees.

DO I HAVE TO LET EMPLOYEES OBSERVE THE MONITORING?

Observation of monitoring: The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.

When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, the employer shall provide the observer with protective clothing and equipment at no cost and shall ensure that the observer uses such clothing and equipment.

ARE THERE ANY HOUSEKEEPING REQUIREMENTS?

Housekeeping: The employer shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.

- Employers are required to use wet sweeping and HEPA-filtered vacuums, whenever feasible.
- When both wet methods or HEPA-filtered vacuums would not be effective, would cause damage, or would create a hazard in the workplace, the employer is not required to use these methods.

ARE THERE ANY HOUSEKEEPING REQUIREMENTS? (CONT’D)

Housekeeping: The employer shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless:

1) The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or
2) No alternative method is feasible.
WHAT MUST BE IN THE EXPOSURE CONTROL PLAN?

**Written exposure control plan:** The employer shall establish and implement a written exposure control plan that contains at least the following elements:

- A description of all tasks in the workplace that involve exposure to respirable crystalline silica;
- A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;

**WHAT MUST BE IN THE EXPOSURE CONTROL PLAN?**

**Written exposure control plan:** The employer shall establish and implement a written exposure control plan that contains at least the following elements:

- A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and
- A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.

**WRITTEN EXPOSURE CONTROL PLAN**

**Written exposure control plan:**

- The employer shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.
- The employer shall make the written exposure control plan readily available for examination and copying, upon request, to each employee, their designated representatives, the Assistant Secretary and the Director.

**WHEN IS MEDICAL SURVEILLANCE REQUIRED?**

**Medical surveillance:**

- The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required to use a respirator for 30 or more days per year.
- Employers are required to pay for time spent traveling and taking medical examinations and for the costs of travel if the employee must travel away from the worksite.
- If the employee is required to wear a respirator at any time during a day, that counts as one day of respirator use.

**MEDICAL REPORT**

**PLHCP’s written medical report for the employee:**

- The employer must ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed.
- Only the employee receives this written medical report.

**WHAT MUST BE IN THE WRITTEN REPORT?**

**PLHCP’s written medical report for the employee:**

- A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;
- Any recommended limitations on the employee’s use of respirators;
- Any recommended limitations on the employee’s exposure to respirable crystalline silica; and
- A statement that the employee should be examined by a specialist if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.
WHAT INFORMATION MUST BE PROVIDED TO THE EMPLOYER?

PLHCP’s written medical opinion for the employer: The employer shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:

- The date of the examination;
- A statement that the examination has met the requirements of this section; and
- Any recommended limitations on the employee’s use of respirators.

WHAT TRAINING MUST THE EMPLOYEE RECEIVE?

Employee information and training: The employer must ensure that each employee receives training on and demonstrate knowledge and understanding of the following:

(A) The health hazards associated with exposure to respirable crystalline silica (Silicosis, cancer, lung effects, immune system effects, and kidney effects);
(B) Specific tasks in the workplace that could result in exposure to respirable crystalline silica;
(C) Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica for each work task, including engineering controls, work practices, and respirators to be used and how to use those measures;

WHAT HAZARDS MUST BE COMMUNICATED TO THE EMPLOYEE?

Hazard communication: The employer shall include respirable crystalline silica in its Hazardous Communication Program and follow all requirements under 1910.1200:

- Employees must be trained in accordance with the provisions of the HCS.
- Employees must understand labels on containers of crystalline silica and have access to safety data sheets.
- Employees must be provided information on the following health hazards resulting from respirable crystalline silica exposure: Cancer, lung effects, immune system effects, and kidney effects.

WHAT TRAINING MUST THE EMPLOYEE RECEIVE? (CONT’D)

Employee information and training: The employer must ensure that each employee receives training on and demonstrate knowledge and understanding of the following:

(D) The contents of the standard (description of the standard’s requirements);
(E) The identity of the competent person; and
(F) The purpose and a description of the medical surveillance program (e.g., when medical surveillance is required, what tests are performed, symptoms associated with crystalline silica exposure-related diseases, the importance of keeping a copy of the written medical opinion to the employer as proof of medical examination).

WHEN IS TRAINING REQUIRED?

Employee information and training:

- Employees must be trained at the time they are assigned to a position involving exposure to respirable crystalline silica.
- Additional training must be provided as often as necessary to ensure that employees know and understand respirable crystalline silica hazards and the protections available:
  - Employee is assigned a new task.
  - Employer introduces new protections.
  - When an employee is working in a manner that suggests he or she has forgotten what was learned in training.

WHAT ARE THE RECORDKEEPING OBLIGATIONS?

Recordkeeping: The employer must maintain and preserve records of exposure monitoring data, objective data and medical records for 30 years. The records must be maintained and made available to employees and employee representatives in accordance with 29 CFR 1910.1020.
QUESTIONS?