OSHA's Respirable Crystalline Silica

What's The Latest ????

DISCLAIMER

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Agenda

- Regulation reminders
- Does it apply?
- Control methods and definitions
- Respiratory Protection
- Housekeeping
- WECP
- Medical Surveillance
- Enforcement
Construction – Compliance Dates

- Employers must comply with all requirements (except methods of sample analysis) by September 23, 2017
- Compliance with methods of sample analysis required by June 23, 2018

Construction Standard

(a) Scope
(b) Definitions
(c) Specified exposure control methods - Table 1 OR
(d) Alternative exposure control methods
   (1) PEL
   (2) Exposure Assessment
   (3) Methods of Compliance
(e) Respiratory protection
(f) Housekeeping
(g) Written exposure control plan
(h) Medical surveillance
(i) Communication of silica hazards
(j) Recordkeeping
(k) Dates
Additional Requirements For Contractors Beyond Exposure Compliance

1. Develop and keep a written exposure control plan
2. Designate a key competent person to implement the exposure control plan, identify exposure risks, take actions to correct exposure issues
3. Train workers to work safely with regards to silica dust
4. Restrict housekeeping practices when silica dust is involved (dry sweeping of concrete)
5. Maintain records of the above

Roadmap for Meeting the Requirements of the Respirable Crystalline Silica Standard

1. Determine if the silica standard applies to your employees.
Could employees be exposed to respirable crystalline silica at or above 25 μg/m³ as an 8-hour TWA under any foreseeable conditions, including the failure of engineering controls, while performing construction activities?

No: No further action is required under the silica standard.
Yes: Choose to comply with the standard using either the:
   • Specified exposure control methods in Table 1, or
   • The alternative methods of compliance

2. Determine what additional requirements you must meet under the standard, based on the compliance method you are following.
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Must the Employer Follow this Requirement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
<td></td>
</tr>
<tr>
<td>If Fully and Properly</td>
<td>No</td>
</tr>
<tr>
<td>Implementing Table 1</td>
<td>Yes</td>
</tr>
<tr>
<td>If Following Alternative</td>
<td></td>
</tr>
<tr>
<td>Exposure Controls</td>
<td>Yes, when exposures are reasonably expected to be above the action level.</td>
</tr>
<tr>
<td>Methods of Compliance</td>
<td>No</td>
</tr>
<tr>
<td>If Following Alternative</td>
<td>Yes</td>
</tr>
<tr>
<td>Exposure Controls</td>
<td></td>
</tr>
<tr>
<td>Respiratory Protection</td>
<td>Yes, if respirator use is required by Table 1</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>Yes</td>
</tr>
<tr>
<td>Written Exposure Control Plan</td>
<td>Yes</td>
</tr>
<tr>
<td>Medical Surveillance</td>
<td>Yes, for employees who must wear a respirator under the silica standard for 30 or more days a year.</td>
</tr>
<tr>
<td>Communication of Hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Recordkeeping</td>
<td>Yes, for any employees who are getting medical examinations</td>
</tr>
<tr>
<td></td>
<td>Yes, for exposure assessments and for any employees who are getting medical examinations</td>
</tr>
</tbody>
</table>

**Construction – Specified Exposure Control Methods**

- **Table 1** in the construction standard matches 18 tasks with effective dust control methods and, in some cases, respirator requirements.
- Employers that fully and properly implement controls on Table 1 do not have to:
  - Comply with the PEL
  - **Conduct exposure assessments for employees engaged in those tasks**
Fully and Properly Implementing Controls Specified on Table 1

• Presence of controls is not sufficient.
• Employers are required to ensure that:
  o Controls are present and maintained
  o Employees understand the proper use of those controls and use them accordingly

Employees Engaged in Table 1 Tasks

• Employees are “engaged in the task” when operating the listed equipment, assisting with the task, or have some responsibility for the completion of the task
• Employees are not “engaged in the task”* if they are only in the vicinity of a task

*must be defined in the WECP
Dust Collection

- Uses equipment that is designed to effectively capture dust generated by the tool being used and does not introduce new hazards such as obstructing or interfering with safety mechanisms.

- Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency –
  - (iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)
  - (vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)
  - Use a HEPA-filtered vacuum when cleaning holes - (vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)
  - Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter cleaning mechanism - (xi) Handheld grinders for mortar removal (i.e., tuckpointing)
Indoor/Outdoor

- Indoor or enclosed area
  - Areas where airborne dust can build up unless additional exhaust is used
- Table 1 requires the use of additional exhaust for example:
  - the use of portable fans
  - portable ventilation systems
  - or other systems that increase air movement and assist in the removal and dispersion of airborne dust

Examples of Enclosed Areas

- Open-top structure with three walls and limited air movement
- Roof structure that limits air dispersal
- Assess the area and implement necessary controls in Workplace Exposure Control Plan (WECP)
Regulated Areas

- Employer must establish regulated area if worker exposures are expected to be above PEL, and demarcate area from rest of workplace so minimizes number of exposed employees

- Must post signs at all entrances with: DANGER – RESPIRABLE CRYSTALLINE SILICA. MAY CAUSE CANCER. CAUSES DAMAGE TO LUNGS. WEAR RESPIRATORY PROTECTION IN THIS AREA. AUTHORIZED PERSONNEL ONLY.

Regulated Areas (continued)

- Limit access to persons authorized by employer and required by work duties to be present, anyone who is employee’s designated representative to observe monitoring, anyone authorized by OSH Act or regs to be in area

- Each person in regulated area must be provided by employer with appropriate respirator and it must by used while in regulated area.
Water Delivery Systems

- Integrated water delivery systems are required for several types of equipment in Table 1.
- Integrated water systems must be developed specifically for the type of tool in use so they will apply water at the appropriate dust emission points based on tool configuration and do not interfere with other tool components or safety devices. Table 1.
- Flow rates vary to control dust; therefore must follow manufacturer’s instructions.

Water Delivery Systems (continued)

- Secondary exposure from slurry when it dries must be minimized and included in the WECP.
- Other factors:
  - Cold Temperature - Freezing
Task Duration (relevant to Table 1)

- **Shift:**
  - A standard 8-hour work period;
  - A day with a break between work periods
    - (e.g., four hours on, two hours off, four hours on);
  - Work periods longer than eight hours;
  - Double shifts within a single day;
  - A work period spanning two calendar days (e.g., 8 pm to 4 am)

Task Duration

- Multiple tasks in Table 1 during the course of a shift, and the total duration of all tasks combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified in the less than four hours per shift column.
Task Duration

- If the total duration of all Table 1 tasks combined is more than four hours per shift, the required respiratory protection for each task is the respiratory protection specified in the more than four hours per shift column.

Respiratory Protection Requirements on Table 1

- Where respirators are required, they must be used by all employees engaged in the task for entire duration of the task
- Must comply with 29 CFR 1910.134
Assigned Protection Factor

- APF means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by 29 CFR 1910.134

- APFs are used to select the appropriate class of respirators that will provide the necessary level of protection.

Assigned Protection Factor

- **Half mask**
  - Filtering Facepiece Dust mask
- APF=10
- Does it need to be fit tested?
- YES if it is required
Assigned Protection Factor

- **Half mask Elastromeric Respirator**
  - APF = 10
  - Does it need to be fit tested?
  - YES if it is required

**Table I: Assigned Protection Factors**

<table>
<thead>
<tr>
<th>Type of Respirator</th>
<th>Quarter Mask</th>
<th>Half Mask</th>
<th>Full Facepiece</th>
<th>Helmet/Hood</th>
<th>Loose-Fitting Facepiece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Air-Purifying Respirator</td>
<td>5</td>
<td>10</td>
<td>50</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Powered Air-Purifying Respirator (PAPR)</td>
<td>—</td>
<td>50</td>
<td>1,000</td>
<td>25/1,000</td>
<td>25</td>
</tr>
<tr>
<td>3. Supplied-Air Respirator (SAR) or Airline Respirator</td>
<td>—</td>
<td>10</td>
<td>50</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>50</td>
<td>1,000</td>
<td>25/1,000</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>50</td>
<td>1,000</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4. Self-Contained Breathing Apparatus (SCBA)</td>
<td>—</td>
<td>10</td>
<td>50</td>
<td>50</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>—</td>
<td>10,000</td>
<td>10,000</td>
<td>—</td>
</tr>
</tbody>
</table>

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### Medical Surveillance

- Employers must offer medical examinations to workers who will be required to wear a respirator under the standard for 30 or more days a year.
- Employers must offer examinations every three years to workers who continue to be exposed above the trigger.
- Exam includes medical and work history, physical exam, chest X-ray, and pulmonary function test (TB test on initial exam only).

### Medical Opinion

- Worker receives **report** with detailed medical findings, any work restrictions, and recommendations concerning any further evaluation or treatment.
- Employer receives an **opinion** that only describes limitations on respirator use, and if the worker gives written consent, recommendations on:
  - Limitations on exposure to respirable crystalline silica, and/or
  - Examination by a specialist
Housekeeping

- When it can contribute to exposure, employers must not allow:
  - Dry sweeping or brushing
  - Use of compressed air for cleaning surfaces or clothing, unless it is used with ventilation to capture the dust
  - Those methods can be used if no other methods* like HEPA vacuums, wet sweeping, or use of ventilation with compressed air are feasible

  *Employer must demonstrate

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Housekeeping

- Sweeping compounds is an acceptable dust suppression housekeeping method.
- Compressed air is allowed when in conjunction with a ventilation system that effectively captures dust cloud or where no alternative method is feasible.
Construction –
Written Exposure Control Plan

○ The plan must describe:
  o Tasks involving exposure to respirable crystalline silica
  o Engineering controls, work practices, and respiratory protection for each task
  o Housekeeping measures used to limit exposure
  o Procedures used to restrict access, when necessary to limit exposures

Written Exposure Control Plan

Employers must:
○ Prepare and implement plan addressing:
  ● Exposure sources
  ● Controls
  ● Housekeeping
  ● Restricting access
○ Review plan yearly
○ Make it available
Objective Data

- Includes air monitoring data from industry-wide surveys or calculations based on the composition of a substance
- Demonstrates 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

Alternative Exposure Control Methods – Exposure Assessment

**Employers must:**
- Determine exposures
- Give employees results
- Let representatives observe
Enforcement

- As of April 23, 2018, OSHA and State Plans that have adopted the silica rule have issued 117 violations.
- 35 cited violations of 29CFR1926.1153(d)(2)(i) for failure to conduct an exposure assessment of worker exposure to respirable crystalline silica; and
- 31 cited violations of 29CFR1926.1153(c)(1) for failing to adhere to the Table 1 list of equipment/tasks and OSHA’s required engineering and work control methods and respiratory protection.
Enforcement

- 20 cited violations of 29CFR1926.1153(g)(1) for lack of a written exposure control plan. OSHA did not provide a breakdown describing which elements were not in compliance or whether employers simply lacked written plans.

Enforcement - WECP

Written exposure control plans must contain four minimum elements:

- (a) a description of the tasks in the workplace that involve exposure to silica;
- (b) a description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to silica for each task (i.e., the employer’s custom-tailored “Table 1” for their unique tasks);
- (c) a description of housekeeping measures used to limit employee exposure to silica; and
- (d) a description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to silica.
Enforcement - WECP

- Virginia Occupational Safety and Health Compliance has issued five citations for crystalline silica dust-related violations and other violations to a Roanoke, Virginia, contractor and has proposed a total of $304,130 in fines. According to Bloomberg Environment, this could be the largest fine imposed to date under the new silica rule.

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