**Commonwealth of Massachusetts**

**Department of Labor Standards**

**OSHA Consultation Program**

[**mass.gov/on-site-consultation-program**](http://www.mass.gov/on-site-consultation-program)

**Written Exposure Control Plan in accordance with the OSHA Respirable Crystalline Silica General Industry Standard**

(CFR 29 1910.1053)

(Revised March of 2024)

***Note:*** *The following model Program is provided as a guideline only.*

*Employers must develop written programs that are specific to their companies’ needs.*

In order to comply with *OSHA 1910.1053, Respirable Crystalline Silica Standard*, the following *Exposure Control Plan* has been established for *(Insert company name)* .
 *(Insert employee name)* is responsible for completing the plan and the coordination of this program.

**1. Applicability**

This program applies to all employees of the company, including per-diem and part-time workers whenever they are exposed to respirable crystalline silica at or above the OSHA Action Level (AL), without the use of any engineering controls. The program shall be provided at no cost to employees.

**2. Exposure Limits**

 *(Insert company name)* shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of the OSHA Permissible Exposure Limit (PEL) of 50 ug/m^3, calculated as an 8-hour Time Weighted Average (TWA).

**3. Exposure Assessment**

 *(Insert company name)* shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the OSHA Action Limit (AL) of 25 ug/m^3. The exposure assessment may be done on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

*(Fill in below if basis of exposure assessment is only objective data)*

 *(Insert company name)* will use gathered objective data to accurately characterize employee exposures to respirable crystalline silica. Objective data is attached to this plan.

*(Fill in below if basis of exposure assessment is only scheduled monitoring)*

 *(Insert company name)* will use scheduled monitoring data to accurately characterize employee exposures to respirable crystalline silica.

*(Fill in below if basis of exposure assessment is objective data and scheduled monitoring)*

 *(Insert company name)* will use a performance option which is a combination of gathered objective data and scheduled monitoring to accurately characterize employee exposures to respirable crystalline silica.

**4.** **Scheduled Monitoring**

The employer shall perform initial monitoring to assess the 8-hour exposure of each employee or a representative fraction of these employees, on the basis of one or more personal breathing zone air sample(s) that reflect the exposures of employees on each shift, for each job classification, in each work area. When monitoring a representative sample of employees, the employer shall focus on those workers who are expected to have the highest exposure to respirable crystalline silica.

If initial monitoring indicates employee exposures are below the AL, then monitoring for those employees will discontinue.

If initial monitoring indicates that employee exposures are above the AL but below the PEL, then monitoring will be repeated within six months.

If the most recent exposure monitoring indicates that employee exposures are above the PEL, then monitoring will be repeated within three months.

When the most recent exposure monitoring, after the initial, indicates that the employees are now below the AL, repeat monitoring will occur within six months, until two consecutive measurements, taken seven or more days apart, are below the action level.  *(Insert company name)*  will reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred. For example, reassessment would be required when a material used in a process is replaced by a material with a higher silica content because the change could reasonably be expected to result in higher exposures to respirable crystalline silica.

**5. Monitoring Results**

The following industrial hygiene air monitoring was conducted by *(Insert name of Industrial*

 *Hygiene Company)* on  *(Insert date(s))* and below are the results by employee and job area.

*(Insert a respirable crystalline silica exposure table with results)*

Example:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employee –Job | Total Sampling Time (min\*): | Air SamplingResults(ug/m^3) | OSHA AL\* (ug/m^3) | OSHA PEL\*(ug/m^3) |
| Insert Employee Name –Insert Work Area or Job Title |  |  | 25 | 50 |
|  |  |  | 25 | 50 |
|  |  |  | 25 | 50 |

min – Minute

PEL – Permissible Exposure Limit

TLV – Threshold Limit Value

TWA – Time Weighted Average

Within 15 working days of receiving the analysis results, the company will notify all employees of their exposure results either individually in writing or post them in an employee accessible location.

If an employee’s exposure to respirable crystalline silica exceeded the PEL, then the company will give that employee a written notification of the exposure level and what corrective action will be taken to reduce the exposure to below the PEL.

**6. Procedures Followed if Exposure Exceeds PEL**

The company will establish **demarcate regulated areas** wherever employee’s exposure to airborne concentrations of respirable crystalline silica is or can be expected to be greater than the PEL, in order to minimize the number of employees exposed. Only authorized personnel will be allowed in the regulated areas.

Signs will be posted at all entrances to the regulated areas that say:

* Danger
* Respirable Crystalline Silica May Cause Cancer,
* Causes Damage to Lungs,
* Wear Respiratory Protection in this Area
* Authorized Personnel Only

The company will provide each employee that must enter and/or work in a regulated area with an appropriate respirator. Respirator protection will only be provided in accordance with the *Respiratory Protection Standard 29 CFR 1910.134*, after the company has developed and implemented an appropriate *Respiratory Protection Program*.

The company will use engineering and workplace controls to reduce and maintain employee exposure to respirable crystalline silica to at or below the PEL, unless the company can demonstrate such controls are not feasible. The company will use such controls to reduce exposure to the lowest feasible level and then supplement them with respiratory protection that complies with *Respiratory Protection Standard 29 CFR 1910.134*.

**7. Workplace Tasks that Involve Respirable Crystalline Silica**

 *(List all tasks with exposure and then fill in a table for each individual task.)*

The following numbered tasks may involve *(Insert company name)*  employees exposed to respiratory crystalline silica: (Examples include: 1. Sawing granite slabs, 2. Polishing granite slabs, 3. Jackhammering into concrete, 4. Cutting cement pavers…)

Task One:

|  |  |
| --- | --- |
| Description of Task: |  |
| Description of Engineering Controls  |  |
| Description of Work Practices with Wet Method Controls |  |
| Description of Work Practices with Vacuum Method Controls |  |
| Description of respiratory protection, type, APF required |  |
| Description of signs that controls are not working effectively  |  |
| Description of the housekeeping methods used to limit employee exposure  |  |

Task One Example

|  |  |
| --- | --- |
| Description of Task: | * (Example: Stone or engineered stone slabs are cut using a saw)
* (Example: Stone or engineered stone slabs are ground using a handheld angle grinder)
* (Example: Stone or engineered stone slabs are polished using a high-speed polisher)
 |
| Description of Engineering Controls of Task One | * (Example: The gantry saw is operated with recirculated water in an enclosed, ventilated booth)
* (Example: The handheld grinders and polishers are operated using water suppression, except for specialty cuts that are performed dry, in which case the grinder is equipped with a shroud to a HEPA-filtered vacuum system.)
 |
| Description of Work Practices for Task One with Wet Method Controls | * (Example: Use a hose to wet the slab off before cutting, grinding, or polishing each section.)
* (Example: Make sure that the slab is positioned underneath the local exhaust hood when sawing and check the flow rate of the local exhaust hood daily.)
* (Example: Make sure that the water is continuously delivered to the point of cutting, grinding, or polishing)
* (Example: Change recirculated water if silt build-up occurs)
 |
| Description of Work Practices for Task One with Vacuum Method Controls | * (Example: Check that the shroud is intact and properly installed. Keep shroud flush with the working surface.)
* (Example: Check that vacuum hosing is intact and not kinked or bent.)
* (Example: Clean or change filters as needed to prevent clogging)
* (Example: Check for proper function of controls by making sure visible dust does not increase)
 |
| Description of respiratory protection, type, APF required for Task One | * (Example: Respirators are not needed if controls are working, and proper working practices are being followed.)
* (Example: If engineering controls fail, respiratory protections with an APF of 10 is required such as N95 or N100 respirator.)
 |
| Description of signs that controls are not working effectively for Task One | * (Example: Water source is empty and fails to be delivered to the grinding angle)
* (Example: Tubing develops a leak or completely breaks and water fails to be delivered to the grinding angle.)
* (Example: Vacuum system stops working due to clogged or broken connections)
* (Example: Dust is emitted from the vacuum system bag due to a rip or other failure)
 |
| Description of the housekeeping methods used to limit employee exposure for Task One | * (Example: Hose down floor frequently and at the end of each work shift. Use floor squeegees to move silica slurry/water to a collection drain)
* (Example: Clean up wet slurry to prevent it from drying and becoming airborne.)
* (Example: Wipe down dust covered shelves and equipment with damp cloths)
* (Example: Use a HEPA vacuum filtration system to vacuum lose dust and debris off of surfaces, pipes, and electrical switches/outlets.)
 |

**8. Medical Surveillance**

 *(Insert company name)* will make medical surveillance available at no cost to their employees who will be occupationally exposed to respirable crystalline silica at or above the AL for 30 or more days per year. All medical testing will be at a reasonable time and place and be performed by a physician or other licensed health care professional (PLHCP).

The initial or baseline medical examination will occur within 30 days after the initial assignment, unless the employee has received a medical examination that meets the specified requirements, within the last three years.

The medical examination will include a medical and work history that focuses on: past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (for example, shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history. The surveillance also includes: a physical examination that focuses on the respiratory system; a digital or film chest X-ray interpreted according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses by a National Institute for Occupational Safety and Health (NIOSH)-certified B Reader (this involves a certified physician reading the X-ray according to certain procedures to determine if it shows signs of diseases such as silicosis); a lung function (spirometry) test that includes forced vital capacity (the total amount of air that is forcefully blown out after taking a full breath), forced expiratory volume in one second (the amount of air forcefully blown out in the first second), and FEV1/FVC ratio (the speed of air that is forcefully blown out), administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course; testing for latent tuberculosis infection; and any other tests deemed appropriate (medically necessary and related to respirable crystalline silica exposure) by the Physician or other licensed health care professional (PLHCP).

 *(Insert company name)*  will provide employees with all of the required medical examinations, once every three years or more frequently if recommended by the PLHCP. The PLHCP will be provided with the employees former, current, and anticipated employment duties with related occupational exposure levels to respirable crystalline silica. Within 30 days of each medical examination, the employee will be provided with a written medical report and verbal explanation of the results from the PLHCP. The company will follow any and all recommendations provide by the PLHCP which include but are not limited to the need for further testing by specialists, limitations on the employee’s use of respirators and/or limitation on employee’s future exposure to silica.

**9. Communication of Respirable Crystalline Silica Hazards to Employees**

 *(Insert company name)*  will include respirable crystalline silica in its *Hazard Communication* *Program* that complies with the *Hazard Communication Program Standard 29 CFR 1910.1200*. Each employee will have access to labels on containers that are fully or partially composed of respirable crystalline silica, *Safety Data Sheets* (*SDSs*), and receive training on the health hazards caused by exposure. All potentially exposed employees will receive training emphasizing how respirable crystalline silica exposure can cause cancer, lung effects, immune system effects, and kidney effects. The employees will also be educated on the specific tasks in the workplace that could result in exposure and the specific measures that the company has implemented to protect employees from those exposures. Those protection measures will include all engineering controls, work practices, and mandatory PPE such as respirators. Employees will also understand the purpose, description, and requirements of the medical surveillance program.

**10. Recordkeeping**

The company will make and maintain an accurate record of all exposure measurements taken and/or objected data used to assess employee exposure to respirable crystalline silica. The exposure records will be maintained for at least thirty years and made available in accordance with *29 CFR 1910.1020*.

The company will make and maintain an accurate record for each employee covered by medical surveillance in accordance with *29 CFR 1910.1020,* for at least the duration of employment plus thirty years.