

Silica Exposure Control Program

Purpose

Exposure to respirable crystalline silica has been shown to cause silicosis, lung cancer, pulmonary tuberculosis, and other airway diseases. The purpose of the silica exposure control program is to protect workers from harmful exposure to respirable crystalline silica.

A combination of control measures will be required to achieve this objective. YOUR COMPANY commits to being diligent in our efforts to select the most effective control technologies available, and to ensure that the best practices, as described in this Exposure Control Plan (ECP), are followed at our worksites.

The work procedures we establish will protect not only YOUR COMPANY workers, but all workers on our worksites.

References

OSHA 29 CFR 1926.1153; 29 CFR 1910.1200; 29 CFR 1910.134;

General Requirements

Due to the significant risk posed by respirable crystalline silica, it is critical that all personnel involved in operations that could potentially create silica dust take specific action to ensure that, as much as possible, a hazard is not created. Special attention should be given to tasks performed in situations causing an increase in exposure, such as tasks done indoors, in enclosed areas, etc.

Examples of common tasks likely to expose employees to respirable crystalline silica:

- Sawing
- Drilling
- Grinding
- Abrasive blasting (e.g., of concrete structures)
- Jackhammering, chipping, or drilling rock or concrete
- Cutting brick or tiles
- Sawing or grinding concrete
- Tuck point grinding
- Road construction
- Loading, hauling, and dumping gravel
- Demolition of structures containing concrete
- Sweeping concrete dust

YOUR COMPANY is responsible to:

- Have a written Silica Exposure Control Program. In addition, develop and implement a Written Exposure Control Plan that contains the required site-specific information.
- Oversee the plan. Designate a competent person to implement the written exposure control plan.
- Restrict housekeeping practices that increase silica exposure. For example, allow dry sweeping only with compound in situations where it will not increase exposure and where wet sweeping, HEPA-filtered vacuuming and other methods that minimize the likelihood of exposure are not feasible.

- Offer medical surveillance. YOUR COMPANY will ensure that all medical examinations and procedures required by the silica standard are performed by a physician or other licensed health care professional at no cost to the employee, and at a reasonable time and place, for any employee who will need to wear a respirator for 30 or more days per year for silica protection.
- Communicate hazards and conduct employee training. Employers must include respirable crystalline silica as part of their existing hazard communication program, as required by OSHA. This means providing adequate employee access to labels on products containing crystalline silica and their corresponding safety data sheets.
- Maintain proper recordkeeping. Employers must keep three separate sets of records: air monitoring data, objective data (air monitoring data from elsewhere, but closely resembling the employer's current operations) and medical surveillance records.

Annual Assessment

The written program's effectiveness must be reviewed at least annually. The written exposure control plan must be evaluated at least once per year and as necessary. Situations where reevaluation may be necessary include regulatory updates, changes in equipment and exposure incidents.

Exposure Assessments

Exposure assessments must be conducted for each employee who is or is expected to be exposed to respirable crystalline silica at or above the action level (8-hour TWA of $25\mu\text{g}/\text{m}^3$). This assessment can be accomplished through the use of objective data or by following Table 1.

The key step in determining a silica exposure assessment is to identify the work activities that would put workers at risk of exposure.

- Work activities — that may generate airborne silica dust—for silica, the route of exposure is through the inhalation of airborne dust. The employer should have a qualified person review the planned work activities to identify those that may generate airborne silica.
- Identify workers at risk of exposure—For example, workers who finish concrete would be at greater risk of exposure than plumbers or electrical workers.
- Amount of exposure—some work activities generate more dust than others, and the amount of exposure should be estimated. Published resources are available that provide air sampling data and compare silica dust levels from various construction activities.
- Duration of exposure—Workers who grind concrete for a full shift may be at greater risk than workers jackhammering for an hour.

Objective Data

Both personal silica monitoring and historical data constitutes objective data. Personal silica monitoring is performed by monitoring employees individually or taking a representative sample from employees. It must be conducted by a qualified person and can either be self-performed or hired out to a professional entity such as an Industrial Hygiene professional. Historical data is silica monitoring information previously collected by a Qualified person, and must reflect conditions closely resembling the specific task or one with higher exposure potential.

Results of Objective Data

If objective data results the exposure to silica is below the 8-hour TWA Action Level of $25\mu\text{g}/\text{m}^3$:

- No further sampling is necessary
- No further controls are required to be implemented

- Continue to monitor the work site and take prompt corrective action to ensure the safe work conditions are maintained

If objective data results the exposure to silica is above the 8-hour TWA Action Level of 25µg/m³ and below the 8-hour TWA PEL of 50µg/m³:

- Implement engineering and administrative controls to reduce the silica exposure
- Continue to monitor every six months or until two separate measurements at least seven days apart are below the Action Level.
- Respirators are voluntary but not required

If objective data results the exposure to silica is above the 8-hour TWA PEL of 50µg/m³:

- Implement engineering and administrative controls to reduce the silica exposure
- Respiratory Protection is required. See YOUR COMPANY's Respiratory Protection Program for specific details on respiratory use.
- Continue to monitor every three months or until two separate measurements at least seven days are below the PEL.

Table 1

Table 1 lists 18 silica-generating tasks along with specific engineering controls and respirator requirements. YOUR COMPANY when following Table 1 must follow these requirements fully and completely. Table 1 will be made available to all employees upon request and a link is available below:

[https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=1270#1926.1153\(c\)](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=1270#1926.1153(c)).

Written Exposure Control Plan

A written exposure control plan is required for *each task* where the exposure is above the 8-hour TWA Action Level of 25µg/m³. YOUR COMPANY will make the written exposure control plans available to each employee upon request and will review each written exposure control plan annually at a minimum for effectiveness and update as necessary. Each written exposure control plan must contain the following elements:

- Description of task(s)
- Description of engineering controls, work practices, and respirator requirements
- Procedures for restricting access to limit adjacent employee exposures
- Description of housekeeping measures used to limit employee exposures

Competent Person

A competent person (as required per OSHA) is one who is capable of recognizing and evaluating situations where overexposure may be occurring and has been authorized by the employer to make corrective actions. The competent person must intervene anytime there is a breakdown in the exposure control plan or an un-evaluated exposure exists. They must control jobsite exposures to employees and adjacent workers. Other responsibilities of the competent person include:

- Capable of knowing how to evaluate the exposure potential;
- Can make an initial recommendation on how to control that exposure. (table 1 or objective data)
- Can select, implement, and manage the appropriate control strategy in simple situations or recommend involving a silica qualified person for more complex situations
- Monitor the work site and take prompt corrective action to ensure that safe work conditions are maintained.

Medical Surveillance

YOUR COMPANY will make available at no cost to the employee a medical surveillance program for all employees whose task requires them to wear a respirator for 30 or more days per year. A baseline medical assessment must be available to employees within 30 days of initial assignment.

The basics of the medical examination include:

During a medical evaluation, YOUR COMPANY employees will go to a qualified health care professional, have an exam, and obtain a written medical opinion which is shared with YOUR COMPANY. This written opinion needs to contain:

- The date of the exam
- A statement that the exam has specifically checked for silica exposure per the requirements of the standard.
- Any recommended limitations on the employee's exposure to respirable crystalline silica as a result of the exam's findings

The employee may learn other medical information from his or her physician during the visit, but this is private and not required to be shared with YOUR COMPANY.

The exam conducted by the qualified healthcare provider must include the following:

- A review of the patient's medical and work history.
- A physical examination with special emphasis on the respiratory system.
- A chest x-ray.
- A pulmonary function test administered by a certified spirometry.
- Testing for latent tuberculosis.
- Any other tests deemed appropriate by the healthcare provider.

Information required to be given to the healthcare provider:

- A copy of the OSHA respirable crystalline silica rule.
- Construction Standard - <https://www.osha.gov/silica/SilicaConstructionRegText.pdf>
- Construction Medical - <https://www.osha.gov/silica/AppendixBtosect1926.1153.pdf>
- A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica.
- The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica.
- A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment.
- Information from records of employment-related medical examinations previously provided to the employee and currently within the control of YOUR COMPANY.

Training

Employees must be provided with training. A training program for respirable crystalline silica shall be provided for all employees who are exposed to the action level or above. The training shall ensure that employees covered by the written exposure control plan can demonstrate knowledge and understanding of the health hazards associated with respirable crystalline silica, the specific tasks in the workplace that could result in exposure to respirable crystalline silica, the specific measures taken to protect employees from exposure to crystalline silica, the contents of the respirable crystalline silica rule, and the purpose of the medical surveillance program.

Records

Applicable records must be kept. Accurate records of all air monitoring data, objective data, and medical surveillance shall be maintained as required by the regulation. Records must be kept of the following:

- All workers who are exposed to respirable silica dust while on the job
- Worker education and training sessions
- Respirator fit-testing
- Equipment maintenance and repair
- Worksite inspections
- Medical surveillance when required

SITE-SPECIFIC SILICA EXPOSURE CONTROL PLAN

Location: _____ Date: _____

Work description:

Primary silica control options (check those options used and explain use if needed)

- ◆ Substitution controls (using procedures or products that do not create silica; must review SDSs)
 - Other means of demo: _____
 - Different products: _____
 - Other substitutions: _____

- ◆ Engineering controls (when using ventilation, draw air out and don't expose others to exhaust dusts)
 - Vacuuming: _____
 - Wetting: _____
 - Ventilation: _____
 - Isolation: _____
 - Other means: _____

- ◆ Administration controls (reducing exposure by work schedules, timing, or planning options)
 - Control points: _____
 - Work schedule: _____
 - Other means: _____

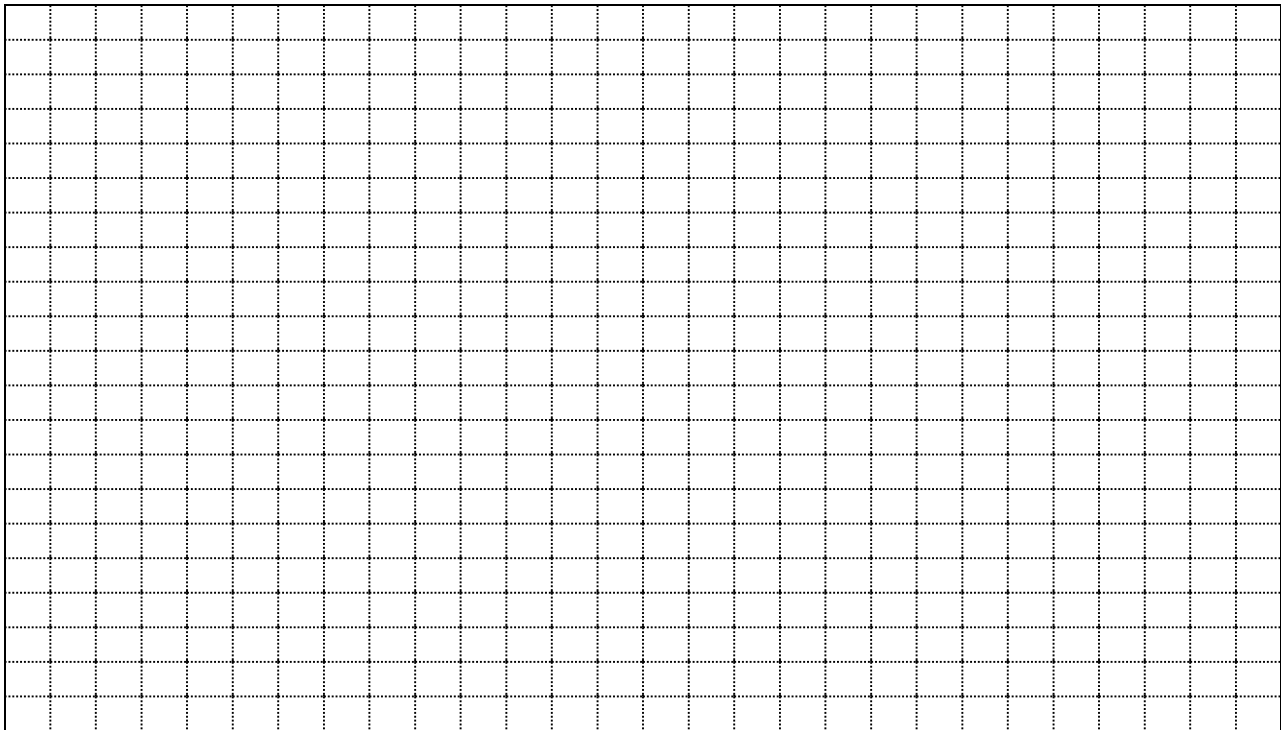
Secondary silica control options (check those options used and explain use if needed)

- ◆ Personal protective equipment
 - Half-mask respirators: _____ Cartridge type: _____ Fit tests confirmed: _____
 - Full-face respirators: _____ Cartridge type: _____ Fit tests confirmed: _____
 - Supplied air units: _____
 - Coveralls required: _____

- ◆ Hygiene and decontamination options (reducing exposures after work has stopped or during breaks)
 - Water or washing facilities on site: _____
 - Vacuuming clothing/self: _____

 - Safe work procedures and other details: _____
 - _____
 - _____
 - _____

Ventilation plan (sketch)



← Show direction of airflow including makeup air locations and discharge air outlets

Area or location in building of ventilation plan (e.g., floor #, wing)

Date plan was reviewed by workers and posted for workers to see

Types of neg. air fans & no.'s *

* Indicate on plan by number the location of the negative air fans

Ventilation safety checklist

- | | |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Makeup air free of possible contaminants | <input type="checkbox"/> Workers not placed between contaminants created and exhaust inlet ports |
| <input type="checkbox"/> Exhaust fan operation has failure warning | <input type="checkbox"/> Discharge air not affecting others |
| <input type="checkbox"/> Dilution fans not stirring up dust | <input type="checkbox"/> All workers equipped with approved respirators |
| <input type="checkbox"/> Wetting of materials used to keep dust down | |

Note: Attach additional sheets if needed or other documents if required due to hazards or work conditions.

Print supervisor's name

Supervisor's signature