

The following plan is intended to serve employers as a sample exposure control plan as required by OSHA's Respirable Crystalline Silica Standard for Construction. Each employer will need to adjust or adapt the plan for their specific use. The plan contains more information than is required by the silica standard (for example, information about exposure assessments, medical surveillance, and training). Employers can include this information in the plan if it is useful to them, but they are not required to do so under the silica standard.

The information *that is required* to be included in the silica exposure control plan is:

- (i) A description of the tasks in the workplace that involve exposure to respirable crystalline silica;
- (ii) A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;
- (iii) A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and
- (iv) 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.

A sample of the *required* information, as well as a fillable form to include the *required* information, can be found in Appendix I.

Note: Employers should consider developing a comprehensive plan that includes all equipment, materials, tasks, and conditions for the jobs they perform. Doing so will greatly reduce the need to update the written plan for each new job or jobsite for employers who use the same equipment to perform the same tasks at many locations.

Additionally, the Center for Construction Research and Training (CPWR) has a tool to help employers develop written exposure control plans that is available at www.silica-safe.org. Unions, trade associations or professional groups may offer sample written exposure control plans or other assistance to employers, which might be helpful, especially if written exposure control plans are tailored to a particular type of construction work performed. Although such general guidance may be helpful, employers must make sure that any plan they use is tailored to address all the information required by the standard and all tasks, tools, and controls used by the employer.

Name of Company

Silica Exposure Control Plan

Purpose

The purpose of this plan is to reduce employee exposure to respirable crystalline silica by identifying tasks that employees perform that could expose them to respirable crystalline silica dust and determining methods to reduce those exposures.

Crystalline silica is a common mineral found in many naturally occurring and man-made materials such as sand, concrete, brick, block, stone, and mortar. Exposures to respirable crystalline silica can occur when operations such as cutting, sawing, grinding, drilling and crushing are conducted on materials that contain crystalline silica.

Scope and Application

The Respirable Crystalline Silica Standard for Construction, 29 CFR 1926.1153, applies to all occupational exposures to respirable crystalline silica in construction work, except where employee exposure will remain below 25 micrograms per cubic meter of air ($25 \mu\text{g}/\text{m}^3$) as an 8-hour time-weighted average (TWA) under any foreseeable conditions. This exposure control plan applies to all employees who are covered under the standard.

Assignment of Responsibilities

Employer (this section can be further broken down by departments / levels of management)

Identify tasks that employees perform that could expose them to respirable crystalline silica at levels above $25 \mu\text{g}/\text{m}^3$ as an 8-hour TWA under any foreseeable conditions.

Determine the control measures that will be used to reduce exposures to respirable crystalline silica (either the Specified Exposure Control Methods of Table I or alternate control methods).

Provide employees with the equipment, tools, engineering controls, personal protective equipment and training needed to fully and properly implement the exposure control methods.

Designate a competent person to implement the silica exposure control plan.

Conduct exposure assessments for tasks where alternative control methods are used.

Offer medical exams to employees who will be required to wear a respirator under the standard for 30 or more days a year.

Ensure that employees are provided with training on respirable crystalline silica in accordance with the Respirable Crystalline Silica Standard and the Hazard Communication Standard.

Maintain records of exposure assessments and medical examinations in accordance with OSHA's Access to Employee Exposure and Medical Records Standard, 29 CFR 1910.1020.

Review and evaluate the effectiveness of the written exposure control plan at least once a year and update it as necessary.

Competent Person:

The Competent Person for Name of Company is Name/Title of Competent Person. The competent person is responsible for administering the exposure control plan. Duties of the competent person include:

Make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan.

Identify existing and foreseeable respirable crystalline silica hazards at the worksite and take prompt corrective measures to eliminate or minimize them.

Employees:

Follow the specified control measures when performing tasks covered under this plan. Use dust controls in accordance with manufacturer instructions. .

Use required personal protective equipment, as indicated.

Inform supervisor or competent person of deficiencies noted in the engineering controls, tasks which are not adequately addressed in this plan, or any other concerns regarding this plan.

Specified Exposure Control Methods

Table I of OSHA's Respirable Crystalline Standard matches 18 common construction tasks with effective dust control methods, such as using equipment with an integrated water delivery system or using equipment with a vacuum dust collection system for capturing dust. For some tasks, the use of respirators is also required.

Name of Company will fully and properly implement the engineering controls, work practices, and respiratory protection specified in Table 1 for each Table I task performed. To be effectively implemented, the specified controls will be maintained in accordance with manufacturer specifications.

Name of Company is not required to conduct exposure assessments or separately ensure compliance with the Permissible Exposure Limit (PEL) for these tasks provided all specified controls are implemented and functioning properly. OSHA has reviewed the control measures specified in Table 1 and found that they are effective at limiting employee exposures to acceptable limits most of the time. For the few tasks where existing control measures cannot limit employee exposures to acceptable limits, Table 1 requires the use of respiratory protection.

The Table I tasks that Name of Company employees perform, and the control measures used for those tasks, are included in Appendix I.

Alternative Exposure Control Methods & Exposure Assessments

For tasks that are not listed in Table I, or where the engineering controls, work practices, and respiratory protection described in Table I are not fully and properly implemented, Name of Company will conduct exposure assessments and ensure compliance with the Permissible Exposure Limit (PEL) of 50 µg/ m³, calculated as an 8-hour time-weighted average (TWA).

Engineering and work practice controls will be used to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL. Where feasible controls are not sufficient to reduce employee exposure to or below the PEL, Name of Company will use those controls to reduce exposures to the lowest feasible level, and supplement the controls with the use of respiratory protection.

Name of Company will 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 of 25 µg/m³ using either the “performance option” or the “scheduled monitoring option.”

Performance Option: Name of Company will assess the 8-hour TWA exposure for each employee on the basis of a combination of air monitoring data or objective data that can accurately characterize employee exposures to respirable crystalline silica. Where objective or historic data shows that employees will not be exposed above limits for the task being performed, exposure monitoring is not required.

Scheduled Monitoring Option: Name of Company will 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. Representative sampling will be conducted.

- If the initial monitoring indicates that employee exposures are below the action level, no further monitoring will be conducted.
- If the most recent exposure monitoring reveals employee exposures at or above the action level but at or below the PEL, Name of Company will repeat monitoring within six months of the most recent monitoring.
- If the most recent exposure monitoring reveals employee exposures above the PEL, Name of Company will repeat monitoring within three months of the most recent monitoring.

Periodic exposure monitoring will be discontinued if two non-initial monitoring results taken consecutively, at least 7 days apart but within 6 months of each other, are below the action level.

Name of Company 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.

The tasks that Name of Company employees perform that are not represented in Table I or are not conducted using the specified exposure control methods listed in Table I are included in

Appendix II. The monitoring and/or objective data used for exposure assessments are included in Appendix III.

Employee Notification

Within five working days after completing an exposure assessment, Name of Company will 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. Whenever an exposure assessment indicates that employee exposure is above the PEL, Name of Company will describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.

Respiratory Protection

Respiratory protection will be provided to employees engaged in a Table 1 task requiring the use of respiratory protection.

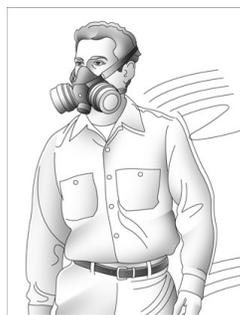
Respiratory protection will also be provided to employees engaged in tasks that are not listed in Table 1 where employee exposures exceed the PEL, and engineering and work practice controls have not yet been implemented, are not feasible, or are not sufficient enough to reduce exposures to below the PEL.

Where respiratory protection is required, Name of Company will provide each employee an appropriate respirator that complies with the requirements of the OSHA Respirable Crystalline Silica Standard and the Respiratory Protection Standard.

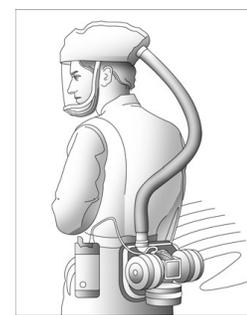
For Table I tasks requiring an Assigned Protection Factor (APF) of 10 or 25, the following types of respirators may be used:



**Half mask Filtering Facepiece
Dust Mask
APF=10**



**Half mask Elastomeric Respirator
APF=10**



**Loose-Fitting Powered
Air-Purifying Respirator
(PAPR)
APF=25**

Respiratory protection will be used in accordance with the OSHA Respiratory Protection Standard, 29 CFR 1910.134. If a respirator is required to be worn by an employee, the employee will be medically cleared, trained and fit-tested on the respirator *prior* to assigned use.

Housekeeping

Cleaning methods such as dry sweeping, dry brushing, and use of compressed air can cause respirable crystalline silica dust on surfaces to be re-entrained into the air and inhaled by employees.

Therefore, dry brushing or dry sweeping will not be allowed when cleaning up dust that could contribute to employee exposure to respirable crystalline silica, unless methods such as wet sweeping and HEPA-filtered vacuuming are not feasible.

Cleaning of surfaces or clothing with compressed air will not be allowed unless the compressed air is used together with a ventilation system that effectively captures the dust cloud or no other cleaning method is feasible.

Cleaning methods which prevent unnecessary exposures to employees such as wet sweeping and HEPA filtered vacuuming will be used. A commercially-available dust-suppression sweeping compound may also be used in accordance with the manufacturer's instructions.

Medical Surveillance

Medical surveillance will be made available at no cost, and at a reasonable time and place, to any employee who is required by the Respirable Crystalline Silica Standard to use a respirator for 30 or more days per year.

An initial examination will be offered within 30 days of initial assignment, unless the employee has had an examination that meets the requirements of the silica standard within the last three years. The examination will include a medical and work history, a physical examination, a chest x-ray, a pulmonary function test, a test for latent tuberculosis infection (initial exam only), and any other tests deemed appropriate by the physician or other licensed health care professional (PLHCP). Thereafter, the employee will be offered a follow-up examination at least every three years, or more frequently if recommended by the PLHCP.

Medical examinations will be provided by List Physician or Licensed Health Care Professional

Located at _____ Address of PLHCP _____.

Hazard Communication

Respirable Crystalline Silica will be included in the Name of Company Hazard Communication Program. Name of Company will ensure that each employee has access to labels on containers of crystalline silica and safety data sheets and is trained in accordance with the provisions of the hazard communication standard. The following hazards will be addressed: cancer, lung effects, immune system effects, and kidney effects.

Training

Name or Title of Individual Who Will Conduct Training will conduct training on respirable crystalline silica and on the contents of the Name of Company Silica Exposure Control Plan. Training will be provided to each employee covered by the standard and will cover at least the following:

- The health hazards associated with exposure to respirable crystalline silica;
- Specific tasks in the workplace that could result in exposure to respirable crystalline silica;
- Specific measures that Name of Company has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
- The contents of the Respirable Crystalline Silica Standard for Construction;
- The identity of the competent person designated by Name of Company;
- The purpose and description of the medical surveillance program.

Training will be conducted using (Ex. hands-on training, videos, slide presentations, classroom instruction, informal discussions during safety meetings, written materials, or any combination of these methods).

Name of Company will determine whether employees have the requisite knowledge through methods such as (Ex. discussion of the required training subjects, written tests, or oral quizzes). Additional training will be provided as necessary.

Name of Company will make a copy of the OSHA Respirable Crystalline Silica Standard available at no cost to each employee covered by the standard.

Recordkeeping

Name of Company will maintain records of air monitoring data, objective data, and medical surveillance data required under the standard. Required records will be maintained and made available in accordance with 29 CFR 1910.1020.

Program Review

Name or Title of Responsible Person will review and evaluate the effectiveness of the written silica exposure control plan at least annually, and update it as necessary.

Appendix I: Tasks with Specified Exposure Control Methods

Appendix II: Tasks with Alternative Exposure Control Methods

Appendix III: Air Monitoring/Objective Data for Tasks with Alternative Control Methods

Appendix I: Tasks with Specified Exposure Control Methods

(Include in this section Table I tasks for which the engineering controls, work practices, and respiratory protection specified in Table 1 are fully & properly implemented. A sample is included)

Sample of Table I Task with specified exposure control methods

Description of Task: Demolishing concrete and tile floors inside homes or public buildings using a jackhammer.

Control Description

Controls:

- Use jackhammer equipped with the appropriate, commercially available shroud and a vacuum dust collection system with the flow rate recommended by the jackhammer manufacturer, a filter that is at least 99 percent efficient, and a filter cleaning mechanism.
- Use a portable exhaust fan to exhaust air and prevent the buildup of dust.

Work practices:

- Check shrouds and hoses to make sure they are not damaged before starting work.
- Make sure the hoses do not become kinked or bent while working.
- Use switch on vacuum to activate filter cleaning at the frequency recommended by manufacturer.
- Replace vacuum bags as needed to prevent overfilling.
- Use the jackhammer and vacuum controls according to manufacturer's instructions for reducing the release of visible dust.
- If visible dust increases, check controls and adjust as needed.

Respiratory protection:

- Use respirator with APF of 10 the entire time the task is being performed.
- See the written respiratory protection program for information on selection, training and fit testing requirements, in addition to proper use instructions for respirators (for example, being clean shaven when using a respirator that seals against the face).

Housekeeping:

- Dust containing silica on work surfaces and equipment must be cleaned up using wet methods or a HEPA-filtered vacuum.
- Do not use compressed air or dry sweeping for removing dust and debris containing silica from work surfaces.
- Dispose of used vacuum bags in a container and keep the container sealed.

Procedures Used to Restrict Access to Work Areas:

Schedule the work so that only employees who are engaged in the task (the jackhammer operator and employees helping the operator) are in the area.

Description of Task: _____

(Include dust-generating task/equipment, material containing silica, indoors/outdoors, etc.)

Control Description

Engineering Controls:

- _____

- _____

- _____

Work practices:

- _____
- _____
- _____
- _____
- _____
- _____
- _____

Respiratory protection *(indicate if it is required or voluntary use):*

- _____
- _____
- _____

Housekeeping:

- _____
- _____
- _____
- _____

Procedures Used to Restrict Access to Work Areas:

- _____
- _____
- _____

Appendix II: Tasks with Alternative Exposure Control Methods

(Include in this section tasks that are not listed in Table I, or where the engineering controls, work practices, and respiratory protection described in Table I are not fully and properly implemented. Examples include drywall sanding, mortar mixing using silo dispenser, site clean-up)

Description of Task: _____

(Include dust-generating task/equipment, material containing silica, indoors/outdoors, etc.)

Control Description

Engineering Controls:

- _____

- _____

- _____

Work practices:

- _____
- _____
- _____
- _____
- _____
- _____

Respiratory protection *(indicate if it is required or voluntary use)*:

- _____
- _____
- _____

Housekeeping:

- _____
- _____
- _____
- _____

Procedures Used to Restrict Access to Work Areas:

- _____
- _____
- _____

Exposure Assessment Conducted Using:

_____ Performance Option (air monitoring/objective data)

_____ Monitoring Option (personal exposure monitoring for silica)

Appendix III: Air Monitoring/Objective Data for Tasks with Alternative Control Methods

(Include in this section information used to conduct exposure assessments such as air monitoring data from industry-wide surveys, equipment manufacturers or trade associations; calculations based on the composition of a substance; area sampling results/ exposure mapping profile approaches; historical air monitoring data)