Silica Control Program

Policy

The purpose of this notice is to inform you that our company has established a Silica Control Program that includes all employees exposed to respirable crystalline silica at or above the OSHA Action Level in this program. The program will include air monitoring to assess employee exposures, engineering and work practice controls to reduce silica exposures, medical examinations (with emphasis on the lungs) to check on employees' health, providing appropriate respiratory protection, and employee training. The purpose of this program is to prevent occupational disease, primarily silicosis, from silica exposures in the workplace. The program applies to employees in the following operations in our company:

- Maintenance
- Service
- Construction

The Environmental, Health and Safety Manager, is the program coordinator, acting as the representative of the company partners, who has overall responsibility for the program. Copies of the written program may be obtained from the environmental, Health and Safety Manager in Room 555 (and are available in the job office trailer).

Under this program, you will be informed of the possible effects of silica exposure on your health; the control measures implemented to reduce exposures; the purpose and selection of respiratory protection and instructions on fitting, use and care; and the purpose of medical monitoring.

Compliance with our company's safety and health requirements, including the Silica Control Program, is a ***condition of employment***. Failure to comply with the requirements of this program will result in disciplinary action outlined in the company's safety and health program.

Definitions

Action Level means a concentration of airborne respirable crystalline silica of 25 micrograms per cubic meter of air ($\mu g/m^3$) or 0.025 milligrams per cubic meter of air (mg/m^3).

Employee Exposure means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

Respirable Crystalline silica means quartz, cristobalite and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality - Particle Size Fraction Definitions for Health-Related sampling.

Permissible Exposure Limit (PEL) means a concentration of airborne respirable crystalline silica of 50 $\mu g/m^3$ or 0.05 mg/m^3, calculated as an 8-hour Time Weighted Average (TWA).

Specified Exposure Control Methods (Construction)

For each employee engaged in a task identified in Table 1 (see appendix 1) of the OSHA Respirable Crystalline Silica standard for Construction (29 CFR 1926.1153), we will implement the engineering controls, work practices, and respiratory protection specified for the task in Table 1. In implementing these control measures, we will:

- 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;
- When exhaust, wet method, vacuum or other engineering controls are not practical or used employees will use the proper respiratory protection.
- Where an employee performs more than one task in Table 1 during the shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task will be the respiratory protection specified for more than four hours per shift. If the total duration of all tasks in Table 1 combined is less than four hours, the required respiratory protection for each task will be the respiratory protection specified for less than four hours.

For tasks not listed in Table 1, or where engineering controls, work practices, and respiratory protection are not fully implemented, alternative control measures will be implemented as discussed below.

Air Monitoring

Air monitoring surveys are used to evaluate personal, breathing zone, employee exposure levels for each process and operation not identified in table 1. Air sampling is conducted on representative employees performing the task being reviewed to evaluate 8-hour time-weighted average exposures to respirable crystalline silica. The monitoring results are used to:

- Determine which employees should be included in the Silica Control Program.
- Identify which equipment, employee locations, and areas are candidates for installation of engineering control measures; and
- Select appropriate respirators to reduce employee exposures.

Air sampling will be conducted by a Certified Industrial Hygienist (CIH). Initial surveys are conducted to evaluate representative employees' exposures while performing tasks not listed on table 1. If initial monitoring indicates that employee exposures are at or above the OSHA Action Level, but below the OSHA PEL, monitoring will be repeated within six months of the most recent monitoring. Where initial or subsequent exposure monitoring reveals that employee exposures are above the OSHA PEL, monitoring will be repeated within three months of the most recent monitoring. Monitoring will continue at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the Action Level.

Employees will be informed of air sampling results within 15 working days after completion of an exposure. Affected employees will be notified of the air sampling results individually in writing. Where exposure monitoring shows employee exposures are at or above the OSHA PEL, the notification will inform the employee of the actions that will be taken to reduce employee exposures to or below the PEL.

Additional monitoring will be conducted if changes in production, equipment or controls are implemented to determine the effect of those changes on employee respirable crystalline silica exposures. Any employee wishing to obtain further information or the monitoring results should contact the

Environmental, health and Safety Manager.

Engineering and Work Practice Controls

If silica exposures exceed the OSHA PEL, feasible engineering and/or work practice controls will be implemented to reduce employee exposures to nonhazardous levels. The ultimate goal is to eliminate hazardous employee exposures to silica levels (i.e., above the OSHA PEL). However, where this is not feasible, measures to ***reduce*** employee exposures to respirable silica will be implemented.

Exposure Control Plan

This plan contains the following information:

1. A description of the tasks in the workplace that involve exposure to respirable crystalline silica;

2. A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task; and,

3. A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica.

4. *(Construction) 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 exposure. This includes exposures generated by other employers or sole proprietors.*

The Environmental, Health and Safety Manager will review and evaluate the effectiveness of the written exposure control plan at least annually and update as necessary.

(Construction) – the foreman has been designated as the competent person who will make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan.

The written exposure control plan is available for examination and copying, upon request, to each employee and their designated representatives.

Labels and Other Warnings

Products containing more than 0.1% crystalline silica will have the required manufacturer labels, and Safety Data Sheets are on file and available to employees.

The purpose of warning signs and labeling is to inform and alert workers of the presence and type of hazard associated with the area or product so that appropriate precautions may be taken.

Housekeeping

The following housekeeping control measures have been established to reduce airborne dust exposures. Each foreman is responsible for housekeeping in their area.

- Cleaning with compressed air and dry sweeping silica are prohibited.

- HEPA- filtered vacuuming and washing down with water are used in place of dust-producing methods.

- Emphasis has been placed on maintaining surfaces free of accumulation of silica dust and on prompt spill cleanup to help reduce the potential for material to become airborne.

Employee Training

As part of our Hazard Communication Program, employees will be informed of silica health hazards; the specific operations that could result in exposure to respirable crystalline silica above the OSHA PEL; the specific procedures implemented to protect employees from exposure to respirable crystalline silica including work practices and the use of personal protective equipment (e.g., respirators and protective clothing); the contents of the OSHA Silica Standard; the purpose and description of the medical surveillance program; *and the identity of the competent person (construction)*.

Medical Management Program

All employees exposed to crystalline silica above the OSHA Action Level will be included in the medical management program. Employees assigned to the following departments or areas could potentially be included in the program.

- Maintenance
- Service
- Construction

The medical examination will be performed by a Physician or other licensed health care professional (PLHCP) within 30 days of beginning a roll that could result in their exposure to respirable silica. Problem chest x-rays are reviewed to determine if further evaluation is needed. The following steps are taken:

1. With a positive chest x-ray (1/0 or greater) the worker is placed in mandatory respiratory protection, or if already wearing a respirator, the program is reevaluated to assure proper fit and that the elements of the OSHA Respirator Standards 29 CFR 1910.134/1926.134 are being met.

2. The worker is referred to a physician specializing in lung diseases for a medical evaluation and medical monitoring as warranted by the examining physician. A written opinion from the examining physician as to whether the employee has any detected condition that would place the worker at an increased risk is provided to the employee and the company while specific medical findings remain confidential.

3. An employee with or without roentgenographic evidence of silicosis who has respiratory distress and/or pulmonary functional impairment will be fully evaluated by a physician qualified to advise the employee whether he/she should continue working in a dusty trade.

4. All medical test results will be discussed with the worker by a physician.

The company's policy is to continually evaluate the effectiveness of our Silica Control Program. One way is through periodic medical examinations so that our employees' health and well-being are maintained. We want to secure day-to-day cooperation from our employees to ensure the success of this program.

In accordance with 29 CFR 1910.1020/1926.1020, medical records will be maintained for at least 30 years following the employee's termination of employment, unless the employee is employed for less than one year and the records are provided to the employee upon termination.

Respiratory Protection

All employees exposed to crystalline silica above the OSHA Action Level will be included in the respiratory protection program.

Appropriate respirators are selected based on the employee exposure levels. Employees will be fit tested

to ensure an adequate fit. Employees are then trained in the use and care of respiratory protection as part of the training program.

Recordkeeping

Records are maintained, and made available to employees upon request, for all medical examinations, air sampling surveys and training sessions. Employees' requests for records should be directed to the Environmental, Health and Safety Manager.

- Survey information includes sampling and analytical methods; type of personal protective equipment, if any, in use at the time of sampling; and the monitoring results.
- Records will be maintained for at least 30 years following termination of a worker's employment.
- Each employee is able to obtain information on his/her exposure and medical examinations.

Additional Information

All employees or their designated representatives can obtain further information on the written program, the OSHA Respirable Crystalline Silica standard, and/or records of air monitoring results or medical exams by contacting the Environmental, Health and Safety Manager.

Appendix I OSHA 1926.1153 – Respirable Silica

Table 1

OSHA's new rule on respirable crystalline silica mandates reducing exposures through engineering and work practice controls. Additionally, it gives contractors flexibility by providing three different compliance options. One of those options is Table 1, which lists 18 silica-generating tasks along with specific engineering controls and respirator requirements. Employers who follow these requirements fully and completely will not have to do air monitoring and will be assumed to be below the permissible exposure limit.

Equipment Task	**Engineering and Work Practice Control Methods**	**Required Respiratory Protection and Minimum Assigned Protection Factor (APF)**	
		≤ 4 hours / shift	**> 4 hours / shift**
(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 Required	None Required
(ii) Hand held 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 manufactures instructions to minimize dust emissions. - when used outdoors …….. - when used indoors or in an enclosed area ……	None Required APF 10 Required	APF 10 Required APF 10 Required

(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 airflow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.	None Required	None Required
Equipment Task	**Engineering and Work Practice Control Methods**	**Required Respiratory Protection and Minimum Assigned Protection Factor (APF)**	
		< 4 hours / shift	**> 4 hours / shift**

(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: - When used outdoors ……. . - When used indoors or in an enclosed area ……..	None Required APF 10 Required	None Required APF 10 Required
(v) Drivable saws 	For tasks performed outdoors only: 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 Required	None Required
(vi) Rig-mounted core saws or drills 	Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None Required	None Required

Equipment Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		< 4 hours / shift	> 4 hours / shift
(vii) Handheld and stand-mounted drills (including impact and rotary hammer) 	Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the airflow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.	None Required	None Required
(viii) Dowel drilling rigs for concrete 	For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.	APF 10 Required	APF 10 Required

(ix) Vehicle-mounted drilling rigs for rock and concrete 	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector. **OR** Operate from within an enclosed cab and use water for dust suppression on drill bit.	None Required None Required	None Required None Required
Equipment Task	**Engineering and Work Practice Control Methods**	**Required Respiratory Protection and Minimum Assigned Protection Factor (APF)**	
		< 4 hours / shift	**> 4 hours / shift**

(x) Jackhammers and handheld powered chipping tools 	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. – When used outdoors …… – When used indoors or in an enclosed area …….. **OR** Use tool equipped with commercially available shroud and 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 and a filter-cleaning mechanism. – When used outdoors …… – When used indoors or in an enclosed area ……..	None Required APF 10 Required None Required APF 10 Required	APF 10 Required APF 10 Required APF 10 Required APF 10 Required
(xi) Handheld grinders for mortar removal (i.e., tuckpointing) 	Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 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.	APF 10 Required	APF 25 Required

Equipment Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		< 4 hours / shift	> 4 hours / shift
(xii) Handheld grinders for uses other than mortar removal 	For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. **OR** Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 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 - When used outdoors ……	None Required	None Required
	- When used indoors or in an enclosed area ……..	None Required	APF 10 Required

(xiii) Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. **OR** Use machine equipped with dust collection system recommended by the	None Required	None Required

Equipment Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		< 4 hours / shift	> 4 hours / shift
	manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the airflow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None Required	None Required
(xiv) Small drivable milling machines (less than half-lane) 	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None Required	None Required

(xv) Large drivable milling machines (half-lane and larger) 	**For cuts of any depth on asphalt only:** - Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. - Operate and maintain machine to minimize dust emissions. **For cuts of four inches in depth or less on any substrate:** - Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. - Operate and maintain machine to minimize dust emissions. **OR**	None Required None Required	None Required None Required
Equipment Task	**Engineering and Work Practice Control Methods**	**Required Respiratory Protection and Minimum Assigned Protection Factor (APF)** **< 4 hours / shift**	**> 4 hours / shift**
	Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None Required	None Required
(xvi) Crushing machines 	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyors, sieves/sizing or vibrating components, and discharge points). Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions. Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.	None Required	None Required

(xvii) Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials 	Operate equipment from within an enclosed cab. When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.	None Required None Required	None Required None Required

Equipment Task	**Engineering and Work Practice Control Methods**	**Required Respiratory Protection and Minimum Assigned Protection Factor (APF)**	
		< 4 hours / shift	**> 4 hours / shift**

(xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-  containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions. **OR** When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	None Required None Required	None Required None Required

Notes:

1. When implementing the control measures specified in Table 1, each employer shall*:
    a. For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
    b. For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;
    c. For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:
        i. Is maintained as free as practicable from settled dust;
        ii. Has door seals and closing mechanisms that work properly;
        iii. Has gaskets and seals that are in good condition and working properly; iv. Is under positive pressure maintained through continuous delivery of fresh air;
        v. 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 vi. Has heating and cooling capabilities.

2. 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 for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.*

* Reference OSHA 1926.1153 Respirable crystalline Silica standard including full table 1 for complete information. Images are for representational purposes only.