**Written Silica Exposure Control Program Example Template**

# 1.0 Applicability and Scope

## **1.1 Applicability**

This Written Exposure Control Plan (Plan) applies to **{CONTRACTOR X}** personnel who are potentially exposed to airborne concentrations of respirable crystalline silica (silica) because of their work activities or proximity to the work locations where airborne silica is being emitted. This Plan also applies to **{CONTRACTOR X}** superintendents, foremen, or safety personnel who may be responsible for overseeing a subcontractor's operations that have the potential to expose personnel to airborne concentrations of silica at or above regulatory and industry action levels and exposure limits.

## **1.2 Scope {ONLY ADDRESS ACTIVITIES PERFORMED}**

This Plan describes the hazards associated with projects involving potential exposure to airborne concentrations of silica and the issues to be addressed during these projects. These projects include, but are not limited to:

* Use of stationary masonry saws used to cut concrete, tile, concrete masonry block, sheet rock, gypsum fiber roof board, or any other product containing quartz.
* Handheld power saws used to cut concrete, asphalt, concrete masonry block, sheet rock, gypsum fiber roof board, or any other product containing quartz.
* Walk-behind saws used to cut concrete or asphalt.
* Rig-mounted or free standing core saws or drills (including impact and rotary hammer drills) used to penetrate concrete, concrete masonry block, sheet rock, gypsum fiber roof board, or any other structural component or product containing quartz.
* Jackhammers and handheld powered chipping tools used to demolish or modify concrete, concrete masonry block, or any other structural component or product containing quartz.
* Vehicle mounted hammers or chipping tools used to demolish concrete, concrete masonry block, or any other structural component or product containing quartz.
* Handheld grinders or cut-off wheels used for mortar removal or cutting/grinding of concrete, concrete masonry block, sheet rock, gypsum fiber roof board, or any other structural component or product containing quartz.
* Walk-behind milling machines or bead blasters used for surfacing activities on concrete, concrete masonry block, asphalt, or any other product containing quartz.
* Installation or demolition of sheet rock, including mudding, taping, texturizing activities with quartz containing materials.
* Hand or power tool sanding of painted surfaces. Current latex paint products contain quartz and the painted substrate (sheet rock, concrete masonry block, concrete) contains quartz.
* Drivable asphalt milling machines used to mill asphalt roadways or walkways.
* Ball mills or crushing equipment used to size products containing quartz.
* All housekeeping operations associated with the activities described above.

**{CONTRACTOR X}** employees who work in proximity to silica-related operations must be aware of safe work practices and take all necessary precautions associated with avoiding and minimizing airborne silica exposure.

1. **Regulatory Review**

Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1153: Respirable Crystalline Silica (Construction Industry) and 29 CFR 1910.1053: Respirable Crystalline Silica (General Industry), contain regulatory requirements specific to respirable crystalline silica. This Written Exposure Control Plan is developed in accordance with the requirements in 29 CFR 1926.1153(g).

**3.0 Project Planning**

**3.1 Training Requirements**

**{CONTRACTOR X}** employees who anticipate working on projects where they could be exposed to airborne silica will be provided training in silica hazards in accordance the **{CONTRACTOR X}** program established to comply with the hazard communication standard (29 CFR 1910.1200). Each employee will have access to labels on containers of crystalline silica and safety data sheets, and be provided information on the health hazards of silica including cancer, lung effects, immune system effects, and kidney effects. In addition, **{CONTRACTOR X}** employees will be provided training and information regarding specific activities identified in this Plan that could result in airborne silica exposure, and the specific engineering controls, work practices and respiratory protection requirements to mitigate the potential airborne silica exposures. This training will provide a discussion of silica hazards, initial exposure determination either by complying with 29 CFR 1926.1153 Table 1 requirements or air monitoring, specific engineering and work practice control measures, personal protective equipment (PPE), and medical surveillance requirements. The training will also identify the **{CONTRACTOR X}** competent person for silica exposure identification and determination of control requirements. All **{CONTRACTOR X}** employees will be provided with access to a copy of 29 CFR 1910.1153 and be trained on the contents of 29 CFR 1926.1153.

**3.2 Medical Surveillance Requirements**

**{CONTRACTOR X}** shall institute medical surveillance for any employees required by this Plan to where a respirator 30 or more days per year. Initial medical surveillance consists of medical and work history with emphasis on: past, present, and anticipated exposure to silica, dust and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history; a physical examination with emphasis on the respiratory system; chest X-ray (a single posterio-anterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems), interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader; a pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, 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 by the Occupational Medicine Provider. Subcontractors are responsible for implementing a medical surveillance program for their employees.

**2.3 Competent Person Requirements**

**{CONTRACTOR X}** shall identify a competent person to inspect and oversee all activities with potential airborne silica exposure. Subcontractors working on projects within the scope of this Program shall appoint a competent person capable of executing the duties described herein. The competent person must have training in the inspection of work areas and equipment and in the determination of safe working conditions. This person shall have a working knowledge of the 1926.1153 standards, shall be capable of identifying airborne silica hazards, shall determine the need for initial and additional exposure monitoring, shall recommend and implement engineering and work practice controls, shall establish levels of PPE, and shall have the authority to take action to eliminate hazards and correct incidences of noncompliance.

# 2.4 Planning Activities

Projects where anticipated activities involve concrete cutting, grinding, sandblasting, drilling, coring, or other abrasive operations are treated as potential sources for airborne silica exposure. Additionally, existing structures and materials such as sheetrock, any painted surfaces with low volatile organic compounds, tile, brick, or some insulation products may contain silica. Likewise, new material installation may involve silica-containing mortar, paints, or insulation. Where process knowledge indicates the presence of silica, **{CONTRACTOR X}** will either implement all controls required by 1926.1153 Table 1- Exposure Control Methods for Selected Construction Operations or conduct an initial determination in accordance with 29 CFR 1926.1153(d)(2).

**3.0 Project Execution**

# 3.1 Safe Work Practices

The requirements of this section are to be followed by **{CONTRACTOR X}** employees, who may be exposed to airborne concentrations of silica at or above the regulatory limits.

**3.1.1 Exposure Assessment**

**{CONTRACTOR X}** will either comply will with and implement all controls required by 1926.1153 Table 1- Exposure Control Methods for Selected Construction Operations or conduct an initial determination in accordance with 29 CFR 1926.1153(d)(2). **{CONTRACTOR X}** must detail here the specific activities that they perform with potential for airborne silica exposure and identify all requirements specified in 1926.1153 Table 1 or describe the exposure assessment they will perform to determine airborne silica exposure levels and the required interim control measures that will be used to protect employees until the exposure levels have been established and final control measures can be identified. If not following 1926.1153 Table 1 requirements or performing an activity with potential airborne silica exposure not identified in Table 1 the exposure assessment must contain elements listed below.

* An exposure assessment is required when employees may be exposed to airborne silica at or above the action level in order to determine the extent to which employees are exposed and the appropriate exposure controls required.
* An initial determination of exposure shall be made at the beginning of operations. The determination shall consist of the collection of personal air samples representative of a full shift including at least one sample for each job classification in each work area, either for each shift, or for the shift with the highest exposure level.
* During the initial determination, until such time that actual airborne concentrations are determined, personnel shall be protected by respiratory protection based on task- specific anticipated airborne concentrations of silica as illustrated in Table 2 below:
* During the initial determination, and in addition to the levels of respiratory protection required, personnel shall be provided with protective clothing and equipment, hygiene facilities, and training.
* Whenever a change in equipment, process, controls, or personnel occurs, or a new task has been initiated, an additional exposure assessment is required.
* When an assessment determines that exposure has occurred above the action level but below the PEL, additional monitoring shall be required at least every 6 months. Additional monitoring shall continue until such time that the monitoring results fall below the action level on two separate occasions at least 7 days apart.
* When monitoring yields results above the PEL, then quarterly monitoring is required. In addition, the quarterly monitoring may be suspended when additional monitoring results fall below the action level on two separate occasions at least 7 days apart.
* Where the competent person can clearly demonstrate, in the absence of air monitoring data, that a work activity will not create airborne silica concentrations in excess of the action level, then air monitoring may be unwarranted. Where a negative initial determination is reached without air monitoring, the competent person must develop a written explanation as to why exposures are not expected to exceed the action level.

**3.1.2 Communication of Hazards**

* Each employee shall be provided training and demonstrate knowledge and understanding of the following:
	+ Health hazards associated with exposure to respirable crystalline silica
	+ Specific tasks that could result in exposure to respirable crystalline silica
	+ Specific measures that are required to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and required use of respiratory protection
	+ The contents of the 29 CFR 1926.1153
	+ The identity of the competent person
	+ Purpose and description of the medical surveillance program
* A written compliance program shall be made available to all affected employees.
* In addition, notification to owners, contractors, and other personnel working in the area shall be made.

**3.1.3 Control Methods**

* Engineering and work practice controls, including administrative controls, shall be implemented to reduce and maintain employee exposure to silica at or below the PEL, to the extent that such controls are feasible.
* Where all feasible engineering and work practice controls that can be instituted are not sufficient to reduce employee exposure to or below the PEL, such controls shall be used, nonetheless, to reduce employee exposure to the lowest feasible level (and in conjunction with respiratory protection).
* Respiratory protection shall be selected based on guidance in 1926.1153 Table 1 or based on a Certified Industrial Hygienist’s or competent person’s assessment of the potential airborne exposure that may be created by the means and methods of work (high energy operations with high airborne dust generation or low energy operations with low dust generation).
* When using mechanical ventilation to control exposure, regularly evaluate the system’s ability to effectively control exposure.
* If administrative controls are used to limit exposure, establish and implement a job rotation schedule that includes employee identification as well as the duration and exposure levels at each job or work station where each affected employee is located.
* A written compliance program shall be established and implemented prior to the start of operations within the scope of this Written Compliance Plan. The written program shall outline the plans for maintaining employee exposure below the PEL.
* Maintain all surfaces as free as possible from accumulations of silica. Select methods for cleaning surfaces and floors that minimize the likelihood of silica becoming airborne (such as using a HEPA vacuum).
* If vacuuming is the method selected, specialized vacuums with HEPA filtration are required. Methods to use and empty vacuums in a manner that minimizes the reentry of silica into the workplace shall be described and used. Use of household vacuums with HEPA filters are not allowed at any time for the collection of dust or debris that contains silica.
* Never use compressed air to remove silica from any surface unless it is used in conjunction with a ventilation system designed to capture the airborne dust created while using the compressed air.
* Employees shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in any areas where exposure to silica is above the PEL (in other words, regulated areas).
* Do not allow employees to leave the workplace wearing any protective clothing or equipment that is required to be worn during their work shift without HEPA vacuum removal of dust.
* Where feasible, install shower facilities and require employees who work in regulated areas to shower at the end of their work shift. Also provide an adequate supply of cleaning agents and clean towels.
* Provide hand washing facilities for use by employees working in regulated areas. Furthermore, require employees to wash their hands and face at the end of the work shift and prior to eating or entering eating facilities, drinking, smoking, or applying cosmetics.
* Eating facilities or areas shall be provided for employees working in regulated areas. These facilities shall be maintained free of silica contamination and shall be readily accessible to those employees.

**3.2.5 Personal Protective Equipment (PPE)**

Respiratory protection must be used for the following conditions:

* During periods when employee exposure to airborne silica exceeds the PEL
* For work operations where engineering and work-practice controls are not sufficient to reduce employee exposure to or below the PEL
* During periods when an employee requests a respirator
* During periods when respirators are required to provide interim protection while conducting initial exposure assessments

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* Powered air-purifying respirators (PAPR) shall be provided to employees who request such a respirator to use where it will provide adequate protection.
* Employees shall be provided, at no cost, protective work clothing and equipment including cotton coveralls or similar full-body clothing, gloves, hats, shoes or disposable shoe coverlets, face shields, vented goggles, or other appropriate PPE.