## COMPETENT PERSON:

This document serves as our required written silica in construction or maintenance activities safety program.
Recognizing the PEL of silica is 50 μg/m3, our program focuses on containment, engineering low dust work practices, PPE, and decontamination.

The competent person will fill out the Site Specific Silica Control plan attached to the Plan.

Our Company’s competent person for the Silica Program is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## WHERE YOU CAN FIND SILICA:

Silica is the second most common mineral on earth and makes up nearly all of what we call “sand” and “rock.” Silica exists in many forms—one of these, “crystalline” silica (including quartz), is the most abundant and poses the greatest concern for human health.

Some common materials that contain silica include:

* Rock and sand
* Topsoil and fill
* Concrete, cement, and mortar
* Masonry, brick, and tile
* Granite, sandstone, and slate
* Asphalt (containing rock and stone)
* Fibrous-cement board containing silica

## WAYS SILICA CAN ENTER THE BODY:

## Inhalation or Ingestion:

When silica is absorbed into the body in certain doses it is a toxic substance.

Silica is a primary component of many common construction materials, and silica-containing dust can be generated during many construction activities, including

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

Unprotected workers performing these activities, or working in the vicinity, can be exposed to harmful levels of airborne silica.

## HEALTH EFFECTS OF SILICA OVEREXPOSURE:

Crystalline silica dust can cause a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs’ ability to extract oxygen from the air. This damage is permanent, but symptoms of the disease may not appear for many years.

A worker may develop any of three types of silicosis, depending on the concentrations of silica dust and the duration of exposure:

* Chronic silicosis—develops after 10 or more years of exposure to crystalline silica at relatively low concentrations
* Accelerated silicosis—develops 5 to 10 years after initial exposure to crystalline silica at high concentrations
* Acute silicosis—develops within a few weeks, or 4 to 5 years, after exposure to very high concentrations of crystalline silica

Initially, workers with silicosis may have no symptoms; however, as the disease progresses, a worker may experience:

* Shortness of breath
* Severe cough
* Weakness

These symptoms can worsen over time and silicosis may lead to death.

Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, and lung cancer.

## REPORTING OF PROBLEMS:

Immediately notify your supervisor if you develop potential signs or symptoms associated with silica poisoning. You should also notify your supervisor if you have difficulty breathing while wearing a respirator or suspect problems with other personal protective equipment.

## TABLE 1: ATTACHED

Engineering and Respiratory Controls for silica protection on job sites will be prescribed by OSHA Table 1 out of the Silica Standard. https://www.osha.gov/silica/
SilicaConstructionRegText.pdf

## ENGINEERING CONTROL OF SILICA DUST:

Our control of silica dust may employ three well-established techniques:

* Dust collection and Vacuum Systems (DC)
* Wet dust suppression (WDS)
* Containment - Restricting or isolating the work activity with barriers or full enclosures (this may be the only option where DC or WDS is not practical or effective)

**Dust Collection**

When dust collection is used in our work, we will employ the following systems and safe work practices:

* Vacuum attachment systems to capture and control the dust at its source whenever possible.
	+ - * + Vacuums will be equipped with a manufacturer approved **mechanical** filter clean out system (this is the rod system on many vacuums).
				+ Employees must use a minimum half mask respirator with P100 filter while emptying vacuum for disposal.
* Dust control systems (used regularly and well maintained).
* Grinding wheels operated at the manufacturers’ recommended rpm (operating in excess of this can generate significantly higher airborne dust levels).
* Retrofit shrouds or exhaust cowlings for corner grinding; use manufacturer-specified rpm speeds and a well-maintained HEPA vacuum.
* Diamond stone grinders, which allow for the use of a more efficient suction casing on the grinder, whenever practicable.
* HEPA or good quality, multi-stage vacuum units approved for use with silica dust. [The vacuum units should be capable of creating a target airflow of at least 70 cfm].
* Work planning, so that concrete grinding can be completed when wet (dust release can be significantly reduced).
* Good housekeeping work practices (for example, use vacuums with high-efficiency particulate air (HEPA) filters, or use wet sweeping).
* Train workers and supervisors on how to properly use and maintain the equipment.

**Wet methods**

When water spray systems are used in our work, we will follow these safe work practices:

* Wetting or misting systems shall be designed with the minimum amount of water necessary to achieve dust control.
* Electrical cords and equipment will be closely monitored to keep off of wet surfaces. Employee shall be continually reminded of electrocution hazards.
* Pressure and flow rate of water will be controlled in accordance with tool manufacturers’ specifications (for cutting saws, a minimum of 0.5 liters of water per minute [0.13 gallons/minute] should be used).
* When sawing concrete or masonry, we will use only saws that provide continuous water to the blade.
* Wet slurry will be cleaned from work surfaces when the work is completed, using a wet vacuum or wet sweeping.

**Containment**

Full or partial containment of work areas may also reduce exposure to workers. However, be aware, containment may increase exposure to workers.

Always use containment with air scrubbing equipment in use.

## RESPIRATORY PROTECTION:

Exposure to hazardous materials requires special precautions against absorption of toxic compounds. While engineering controls (e.g. HEPA vacuums) are the primary means of controlling materials such as silica dust, it is often necessary to rely on respiratory protection.

**Respirators for Silica exposure will be selected using OSHA Table 1 attached.**

See our Respiratory Protection Program for respiratory training, selection, fit testing and medical surveillance required.

Personal Protective Equipment required to protect personnel is to be supplied at no cost to the employees.

Respiratory Selection for general silica dust:

* For exposure up to 10 times the PEL, a half mask respirator with P100 filters shall be worn.
* For exposure up to 50 times the PEL, a full face respirator with P100 filters shall be worn. PAPR respirators with P100 filters may also be used.

## 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.

## MEDICAL SURVEILLANCE:

Employers must offer medical examinations:

Within 30 days of initial assignment (the day the employee starts working in a job/ task in which he or she will be required by the silica standard to wear a respirator for 30 or more days per year), unless the employee has had an examination that meets the requirements of the silica standard within the last three years.

Every three years from the employee’s last examination that met the requirements of the silica standard, or more frequently if recommended by the PLHCP, if the employee will continue to perform tasks that require respirator use under the silica standard for 30 or more days per year.

## MEDICAL EXAMINIATION:

An initial medical examination provided under the silica standard consists of:

* 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;
* A physical examination that focuses on the respiratory system;
* A digital or film chest X-ray interpreted according to the International Labor Office (ILO) International Classification of Radiographs of Pneumoconioses by a National Institute for Occupational Safety and Health (NIOSH)-certified B Reader
* 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;
* Any other tests deemed appropriate (medically necessary and related to respirable crystalline silica exposure) by the PLHCP.

## POSTING WARNING SIGNS:

A warning sign must be illuminated, kept clean, and posted in work areas where the exposure to silica exceeds the PEL. The sign must read:

**DANGER**

**RESPIRABLE CRYSTALLINE SILICA**

**MAY CAUSE CANCER**

**CAUSES DAMAGE TO LUNGS**

**WEAR RESPIRATORY PROTECTION IN THIS AREA**

**AUTHORIZED PERSONNEL ONLY**

## EMPLOYEE INFORMATION & TRAINING:

Information and training will be given to all employees who may be exposed to silica above the action level, or who may suffer skin or eye irritation from silica.

**SILICA Training must be done annually.**

We will train all workers potentially exposed to airborne silica dust in the following:

* Hazards associated with exposure to silica dust
* The risks of exposure to silica
* Signs and symptoms of silica disease
* Safe work procedures to be followed (e.g., setup of enclosures, disposal of silica waste, personal decontamination)
* Use of respirators and other personal protective equipment (e.g., donning and doffing of personal protective equipment, and cleaning and maintenance of respirators)
* Use of control systems (e.g., DC and wet methods)
* How to seek first aid (for example, the location and use of eyewash stations)
* How to report an exposure to silica dust

Additionally, we will train on the Globally Harmonized System of Hazard Communication Program using the NICA GHS Videos, PowerPoint and Handout.

## WORK PRACTICES:

Whenever possible these four processes are applied to work involving silica:

* Contain any dust created
	+ Use air scrubber if in full containment
* Use low dust engineering work practices
	+ Wet Methods
	+ HEPA Vacuum
	+ Regular Cleanup
* Wear appropriate PPE including respirator
	+ Overalls
	+ Gloves
	+ Eye Protection including face shield for chipping applications
	+ Hearing protection
	+ Substantial footware
	+ Respirator per selection chart
* Decontaminate after leaving work area
	+ Dry Decon using HEPA Vacuum

## RECORD KEEPING:

The following records will be kept on file at the corporate office, if applicable:

* Exposure monitoring for airborne silica by project, if done.
* Names of employees and social security numbers in Medical Surveillance under this program.
* Copy of exam results, records will be kept on file for 30 years after termination of employment, whichever is longer.
* Date of removal and return, whether or not the removal was due to an elevated blood silica level.

An offer of medical surveillance will be provided to each employee who may be exposed above the PEL for 30 days in a calendar year. This will be kept on file for 30 years after termination of employment, whichever is longer.

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| --- |
| Date control plan completed:: |
| Prime contractor: | Superintendent: |
| Project manager: | Safety/First Aid attendant: |
| Project: | Address: |
| Company completing work: |
| Address: | Contact: |
| Contact phone: | Contact fax: |
| Competent Person(s): |
| Worker(s): |  |  |
|  |  |  |
| Scope of work to be completed: |
| Work start date: | Duration: 🞏 Days 🞏 Months 🞏 Years |
| Employer responsible for: |
| Competent Person must perform an ***exposure assessment*** with employees in appropriate PPE (and attach) or mark appropriate line from OSHA **TABLE 1: SPECIFIED EXPOSURE CONTROL METHODS**  <https://www.osha.gov/silica/SilicaConstructionRegText.pdf>  |
| TABLE 1: 🞏 (i) 🞏 (ii) 🞏 (iii) 🞏 (iv) 🞏 (v) 🞏 (vi) 🞏 (vii) 🞏 (viii) 🞏 (ix) 🞏 (x) 🞏 (iii) 🞏 (xi) 🞏 (xii) 🞏 (xiii) 🞏 (xiv) 🞏 (xv) 🞏 (xvi) 🞏 (xvii) 🞏 (xviii)  |
| PRODUCTS USED |  | **WORK PROCESS** | **WORK PROCESS** | **CONTROL MEASURE** |
| 🞏 Asphalt | 🞏 Soil | 🞏 Abrasive Blasting | 🞏 Scabbing | 🞏 Signage |
| 🞏 Brick | 🞏 Stone (Granite, etc) | 🞏 Bushhammering | 🞏 Scarifying | 🞏 After Hours Work |
| 🞏 Cement | 🞏 Stucco | 🞏 Cutting/Sawing | 🞏 Scraping | 🞏 Exhaust fan |
| 🞏 Concrete Block | 🞏 Terrazzo | 🞏 Demolishing | 🞏 Sweeping | 🞏 Wetting |
| 🞏 Drywall | 🞏 Tile (clay or ceramic) | 🞏 Disturbing |  |  |
| 🞏 Fiber Cement Products | 🞏  | 🞏 Drilling/Coring |  | 🞏 Partial containment |
| 🞏 Gunite/Shotcrete | 🞏 | 🞏 Earthmoving |  | 🞏 Full containment |
| 🞏 Motor | 🞏 | 🞏 Grinding | **EQUIPMENT** |  |
| 🞏 Paints with Silica | 🞏 | 🞏 Jackhammering | 🞏 Hand Grinder | 🞏 Shroud |
| 🞏 Plaster | 🞏 | 🞏 Milling | 🞏 Floor Grinder | 🞏 Barriers |
| 🞏 Castables | 🞏 | 🞏 Polishing | 🞏 Mounted Drill | 🞏 HEPA vacuum |
| 🞏 Rock | 🞏 | 🞏 Pouring | 🞏 Scarifyer | 🞏 Wet Shoveling |
| 🞏 Concrete Roof Tile Products | 🞏 | 🞏 Sacking/Patching | 🞏 Milling Machine | 🞏 NO Compressed Air |
| 🞏 Sand | 🞏 | 🞏 Sanding | 🞏 Drivable Milling | 🞏 NO Dry Sweeping |
| Notes on Specific Tasks and Work Processes: |
| Workers trained in (training records must be available for review): |
| Dangers of Silica, Medical Surveillance | Y🞎 N🞎 | Proper use of admin controls | Y🞎 N🞎 |
| Proper use of engineering controls/equipment | Y🞎 N🞎 | Proper use of PPE (Respirator Fit Test/Med Evaluation) | Y🞎 N🞎 |
| Proper disposal methods and vacuum maintenance | Y🞎 N🞎 | Other  | Y🞎 N🞎 |
| Respirators: |
| Required: Y🞎 N🞎 | ½ Mask Full Face SAR Hood | Fit-tested: Y🞎 N🞎 |
| PPE required for scope of work (other than respirator) |
| 🞏 Coveralls 🞏 Gloves 🞏 Rubber boots 🞏 Eye protection (Shield) 🞏 Reflective vest 🞏 Hearing protection 🞏 Apron |

**EMPLOYEE NAME:­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE OF OFFER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

During the course of your employment you may do construction activities that:

* May require respirator use.
* May result in an exposure to silica for over 30 days over the PEL requiring use of a respirator.

**We are offering you one or more of the following exams:**

**RESPIRATOR ONLINE SURVEY Initial Annual**

Frequency: Initial, upon changes in medical condition or tasks significantly increasing physical burden, and yearly thereafter.

Consists of: At a minimum, respirator use questionnaire. At the discretion of the physician: physical examination, pulmonary function test, chest X-ray

Provider of medical survey: [respexam.com](http://respexam.com)

I ACCEPT DECLINE this online medical exam for my respirator use.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature Date

I understand use of my respirator also includes a fit test of each model I use.

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Respirator Model Fit Test Date

SILICA PHYSICAL EXAM

**Exam offered: Baseline 30 Days Exposure Tri-annual**

Frequency: Initial, after 30 days exposure above the PEL requiring respirator use, and biannually thereafter

Consists of: A medical and work history, physical exam, digital or film chest X-ray, lung function test, Testing for latent tuberculosis infection, and any other tests deemed appropriate (medically necessary and related to respirable crystalline silica exposure) by the PLHCP.

Provider:

I ACCEPT DECLINE this online medical exam for silica exposure.

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Signature Date

***I understand if I request either of these medical surveillance survey or physical exam in writing in the future my employee will provide them with 30 days at no cost to me.***