

Silica Control

Program Audit Checklist

Why conduct an audit of your program?

A periodic audit of your Silica Control Program can help you ensure that key program elements are in place and operating. Asking and answering the questions on the sample checklist is one tool that can be used to help you assess your silica control program, identify potential gaps or weaknesses, and develop appropriate solutions.

How to conduct an audit of your program

The Sample Program Audit Checklist should be used to review your Silica Control Program as it currently operates, not as you think it should be operating or as it was originally intended to operate. Review the pertinent records (for example, air monitoring results, respiratory protection program, training records) to help you determine the status of key program elements. After completing the exercise, determine which program elements need improvement (i.e., where there are "No" answers) and complete the Silica Control Program Audit Results at the end of the document.

Please Note: The audit procedures in the Sample Program Audit Checklist are based on the OSHA Respirable Crystalline Silica standards, OSHA's Special Emphasis Program to Prevent Silicosis, and NIOSH's Recommended Standard for Occupational Exposure to Crystalline Silica. Some states may impose more stringent requirements than those covered by the sample checklist. Be sure to refer to all applicable state and local regulations when conducting your audit.

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Silica Control

Sample Program Audit Checklist

A. Exposure A	Asses	ssment	Yes	No
Begin your audit with a review of the air sampling records related to employee exposure to respirable crystalline silica.	1.	Has air monitoring been conducted to assess 8-hour TWA exposure for each employee on the basis of one more personal air samples that reflect the exposures of employees on each shift, for each job classification, in each work area?		
Be sure to consider any new areas or processes where employee silica exposure occurs, but which have not been	2.	For representative sampling, was the employee(s) who was expected to have the highest exposure to respirable crystalline silica monitored?		
monitored yet	3.	Was all monitoring equipment calibrated before and after the survey(s) and is calibration documentation available?		
	4.	Were the samples submitted to an analyzed by an AIHA accredited laboratory per the in accordance with Appendix A of 29 CFR 1910.1053 or 29 CFR 1926.1153		
	5.	Were all affected employees notified of the air sampling results within 15 days after completing an exposure assessment (5 days for construction)?		
	6.	If the most recent sampling results were between the Action Level and PEL, was additional air monitoring conducted within 6 months of the most recent monitoring?		
	7.	If most recent sampling results were above the PEL, was additional monitoring conducted within 3 months of the most recent monitoring?		
	8.	Are airborne silica monitoring results used to prioritize areas and operations for implementation of control measures?		
	9.	Are/were exposures reassessed after changes in production processes, control equipment, personnel, or work practices that could result in exposure at or above the action level?		
	10.	Are records maintained for all air sampling surveys?		

Α.	Exposure Assess	ment		Yes	No
	11. E fe	Does tł ollowir	ne air monitoring survey information include the ng:		
		a.	Date of measurement for each sample taken?		
		b.	Task monitored?		
		C.	Sampling and analytical method used?		
		d.	Number, duration and results of samples taken?		
		e.	Identity of the laboratory that performed the analysis?		
		f.	Type of personal protective equipment, such as respirators, worn by the employees monitored?		
		g.	Name, social security number, and job classification of all employees represented by the monitoring, including which employees were actually monitored?		
		Are em OS	e reports from silica surveys available for review by ployees, their designated representatives and HA representatives?		

B. Evaluation of the Written Program				Yes	No
Next, evaluate the content and implementation of your written Silica Control Program.	1.	Has a impler	written Silica Control Program been established and nented for your facility or job site?		
The written program should reflect what you are doing in your	2.	Does t instruc	he written program include a description and tion for the following:		
workplace. For example, the written program should list the		a.	Policy statement outlining management's commitment to an effective program?		
affected employees or areas at your site, indicate who is responsible for the various aspects of the program, and indicate how any written		b.	Exposure assessments, including identification of employees/tasks where exposure to respirable crystalline silica exists, and ongoing air monitoring procedures?		
materials or exposure records will be made available to employees		C.	Work practice and engineering control measures in place and planned?		
employees.		d.	Use of personal protective equipment and work clothing, including respiratory protection procedures, if respirators are utilized?		
		e.	Labeling and warning procedures?		
		f.	Housekeeping and hygiene procedures?		
		g.	Employee Training procedures?		
		h.	Recordkeeping procedures?		
	3.	Have y control	ou established and implemented a written exposure plan?		
	4.	Does t	he written exposure control plan include:		
		a.	A description of the tasks in the workplace that involve exposure to respirable crystalline silica?		
		b.	A description of engineering controls, work practices, and respiratory protection used to limit employee exposures to respirable crystalline silica?		

В.	Evaluation of the Written Program			No
	c.	A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica?		
	d.	(Construction) A description of 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?		
	e.	(Construction) Has a competent person been designated to make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan?		
	f.	Is the written exposure control plan made available for examination and copying, upon request, to each employee, their designated representative, and others as indicated in the OSHA Respirable Crystalline Silica Standards?		
	g.	Is the written exposure control plan reviewed and evaluated at least annually, and updated as necessary?		

C. Engineerin	g an	d Work	Practi	ce Controls	Yes	No	
Engineering controls include substitution with less toxic materials, dust suppression methods, and ventilation control	<i>ineering controls</i> <i>ude substitution</i> <i>less toxic</i> <i>erials, dust</i> <i>pression methods,</i> <i>ventilation control</i> 1. Are engineering controls (such as substitution, dust suppression, ventilation, and isolation) used wherever it is economically and technically feasible to lower the silica exposure of workers?						
measures. Work Practice controls include appropriate housekeeping, maintenance and repair operations,	2.	2.	(Consti that ma Crystal 1926.1 or supe	ruction) atch thos lline Silio 153) an erior to t	Have you identified job tasks on your jobsites se included in Table 1 of the OSHA ca standard for construction (29 CFR d verified that the controls used are equal to hose listed?		
and prohibited practices.		a.	ls a me minimi perforr	eans of exhaust provided as needed to ze the accumulation of visible dust for tasks ned indoors or in enclosed areas?			
		b.	For tas applied release	sks performed using wet methods, is water d at flow rates sufficient to minimize the e of visible dust?			
		C.	For im enclos booth:	plemented measures that include an ed cab or booth, is the enclosed cab or			
			i.	Maintained as free as practicable from settled dust?			
			ii.	Have doors seals and closing mechanisms that work properly?			
			iii.	Have gaskets and seals that are in good condition and working properly?			
			iv.	Under positive pressure through continuous delivery of fresh air?			
			v.	Have intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0µm range (e.g., MERV-16 or better)?			
			vi.	Have heating and cooling capabilities?			

C.	C. Engineering and Work Practice Controls					
	3.	Are ins schedu	pection and maintenance of engineering controls led regularly to ensure their continued effectiveness?			
	4.	Have p equipn for leal	preventive maintenance and prompt repair of ment been implemented to help reduce the potential kage and collection of dusts containing silica?			
	5.	Regula	ated Areas (General Industry)			
		Have r employ can rea (prefe l	egulated areas been established where an /ee's exposure to respirable crystalline silica is, or asonably be expected, to exceed the PEL rably the Action Level)?			
	6.	Are sig OSHA 1910.1	Ins posted at all entrances to regulated areas per the Respirable Crystalline Silica Standard (29 CFR 053?			
	7. Is access to regulated area limited to:					
		a.	Authorized persons required by work duties to be present in the regulated area?			
		b.	Any person entering such an area as a designated representative of employees for the purpose of observing monitoring procedures?			
		C.	Any person authorized by OSHA act or regulations issued unit it to be in a regulated area?			
	8.	House	keeping			
		a.	Are surfaces maintained free of silica dust accumulation?			
		b.	Are spills promptly cleaned to help reduce the potential for material to become airborne?			
		C.	Is dry sweeping or dry brushing prohibited where such activity could contribute to employee exposures to respirable crystalline silica?			

Engineering and Wo	ork	Practice Controls	Yes	No
(d.	Have dust controlling cleaning methods such as wet sweeping, HEPA-filtered vacuuming, or other methods that minimize likelihood of exposure been implemented, where feasible?		
6	e.	Has the use of compressed air to clean clothing or surfaces been prohibited when such activity could contribute to employee exposure to respirable crystalline silica?		
f	f.	If compressed air is used, is it used on conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air?		
9. Hyg i	ien	e Procedures		
á	a.	Is smoking, eating and drinking prohibited in areas with potential respirable crystalline silica exposure?		
a	a.	Is the employees' work clothing vacuumed before entering the lunch and break area and before removal at the end of the shift?		
ł	b.	Is cleaning of work clothing by shaking or blowing with compressed air prohibited?		

C.

D. Respiratory Protection

Per the OSHA SilicaStandards, approvedrespiratory protection,governed by a1.respiratory protectionprogram, is requiredfor every workerexposed to silicaabove the OSHA PEL2.when exposures arenot controlled byengineering means.

Since OSHA recognizes that the PELs may not be as protective of worker health as other occupational health standards, respiratory protection should be provided when exposures are at or above the OSHA Action Level.

When evaluating respiratory protection, be sure to review the most recent exposure assessments to help determine that respirators currently assigned are appropriate (i.e., have 3. an adequate Assigned Protection Factor).

A "walk-through" should be conducted to determine, first hand, that employees are wearing and maintaining their assigned respirators, as directed

Construction

- Are appropriate respirators provided where specified by <u>Table 1</u> in the OSHA Respirable Crystalline Silica standard for construction (29 CFR 1926.1153)?
- 2. For tasks not listed in <u>Table 1</u>, or where the engineering controls, work practices, and respiratory protection described in Table 1 are not fully and properly implemented, are appropriate respirators provided:
 - a. Where exposures exceed the PEL (*preferably Action Level*) during periods necessary to install or implement feasible engineering and work practice controls?
 - b. Where exposures exceed the PEL (*preferably Action Level*) during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible?
 - c. During tasks for which all feasible engineering and work practice controls are implemented and such controls are not sufficient to reduce exposures to or below the PEL (*preferably Action Level*)?

General Industry

- Is appropriate respiratory protection provided: a. Where exposures exceed the OSHA PEL (*preferably Action Level*) during periods necessary to install or implement feasible engineering and work practice controls?
 - b. Where exposures exceed the PEL (*preferably Action Level*) during periods during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible?
 - c. During tasks for which all feasible engineering and work practice controls are implemented and such controls are not sufficient to reduce exposures to or below the PEL (*preferably Action Level*)?

Yes No

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D. Respiratory Protection

	d. During periods when the employee is in a regulated area?	
	General Industry and Construction	
4.	Is each respirator, currently assigned and in use a NIOSH certified respirator?	
5.	Has each respirator been selected based on NIOSH Assigned Protection Factors and results of the most recent silica exposure assessments (See <u>Table 1</u>)?	
6.	Are NIOSH approved, Type CE abrasive blasting respirators (continuous flow air-line respirators) required during silica sand abrasive blasting operations?	
7.	Based on your observations during a walk-through, are employees wearing the respirators assigned to them for the job/task that requires respirator use?	
8.	Are supervisors adequately enforcing use of respirators where needed?	
9.	Is the use of respiratory protection governed by a respiratory protection program which meets the requirements of 29 CFR 1910.134, Respiratory Protection, including procedures for:	
	 a) respirator selection b) medical evaluations c) training d) fit testing e) use f) cleaning and storage 	

Yes

No

E. Labeling and	Yes	No		
The purpose of warning signs and labeling is to inform and alert potentially exposed workers of the presence and type of hazard	1.	Are required warning signs printed in English and the predominant language of non-English speaking employees (unless otherwise trained and informed of the hazardous areas)?		
and/or product so appropriate precautions may be taken.	2.	Are illiterate employees otherwise trained and informed of the hazardous areas?		
Labeling and warnings described in your written program should be verified by a "walk- through".	3.	Is a warning sign restricting access posted and readily visible at entrances to Regulated Work areas where exposure to respirable crystalline silica exists?		
	4.	Is a warning sign or other labeling with appropriate hazard warning posted or readily available in any work area where exposure to crystalline silica exists (and where respirators are required)?		
	For	manufacturers and distributors:		
	5.	Is a warning label with appropriate hazard warning placed on all materials, mixtures, and other products containing more than 0.1% crystalline silica, or on their containers? <i>Note: These labels must be in addition to or in</i> <i>combination with labels required by other statutes,</i> <i>regulations or ordinances?</i>		
	6.	Do Safety Data Sheets indicate the presence of silica for concentrations at or above 0.1% and indicate the IARC (International Agency for Research on Cancer) carcinogenic designation?		

F. Medical Sur	veilla	ance		Yes	No
The medical surveillance program should: (1) establish a baseline with which to assess changes in an exposed	1.	Are me are pot above (Gener protect	edical examinations conducted on individuals who entially exposed to respirable crystalline silica at or the OSHA Action Level for 30 or more days per year ral Industry) or required to wear a respirator as ion for silica exposure for 30 or more days per year		
worker's respiratory system,	2	(Const	ruction)?		
(2) provide for early detection of abnormalities, and	Ζ.	after in a medi OSHA	itial assignment, unless the employee has received cal examination that meets the requirements of the standards within the last three years?		
(3) Identify failures in the dust control program and potentially hazardous work areas not found by inspection	3.	Has a empha	medical and work history been conducted with sis on:		
and exposure monitoring. The audit should include a review of		a.	Past, present and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system?		
available, non- confidential records to determine that the appropriate level of medical surveillance is performed for		b.	Any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing)?		
employees. An interview with the medical provider may be needed to complete		C.	History of tuberculosis?		
the audit.		d.	Smoking status and history?		
	4.	Is the f	ollowing included in the medical examination:		
		a.	Physical examination with special emphasis on the respiratory system?		
		b.	A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and 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 Pneumoconioses by a NIOSH- certified B reader:		

F.	Medical Surveillance			No
	c.	A pulmonary function test to included forced vital capacity (FVC) and forced expiratory volume in one second (FEV ₁) and FEV ₁ /FVC ratio, administered by a spirometry technical with a current certificate from a NIOSH-approved spirometry course?		
	d.	Testing for latent tuberculosis infection?		
	e.	Any other tests deemed appropriate by the PLHCP?		
	5. Are pe work h respira test ma more f	riodic medical examinations that include medical istory; physical examination with emphasis on the tory system; chest X-ray; and pulmonary function ade available to employees every three years, or requently if recommended by the PLHCP?		
	6. Inform			
	Has th approp			
	7. Has th inform	las the examining PLHCP been given the following nformation?		
	a.	A description of the employee's former, current, and anticipated duties as they related to occupational exposure to respirable crystalline silica?		
	b.	The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica?		
	C.	A description of any personal protective equipment used or to be used by the employee, including when and for long the equipment will be used?		
	d.	Information from records of employment-related medical examinations previously provided to the employee and currently within the company's control?		

F.	Medical Surveilla	ance	Yes	No
	8.	PLHCP's written medical report for the employee:		
		Have steps been taken to ensure that the PLHCP explained to the employee the results of the medical examination and provided each employee with a written medical report within 30 days of the examination?		
	9.	Does the written medical report include:		
		a. The results of the medical examination including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica?		
		b. Any recommended limitations on respirator use?		
		c. Any recommended limitations on the employee's exposure to respirable crystalline silica?		
		d. A statement that the employee be examined by a specialist if the chest X-ray is classified as 1/0 or higher by the B reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP?		
	10.	PLHCP's written Medical Option for the employer:		
		Has the PLHCP provided a written medical opinion within 30 days of the medical examination?		
	11.	Does the written medical opinion included the following information:		
		a. The date of the examination?		
		b. A statement that the examination has met the medical surveillance requirements of the OSHA respirable crystalline silica standard(s)?		
		c. Any recommended limitations of the employee's use of respirators?		
	12.	If the employee provides written authorization, does the		

written opinion contain the following information:

F.	Medical Surveilla	ce		Yes	No
		a. Any recommen exposure to res	ded limitations on the employee's spirable crystalline silica?		
		 A statement that by a specialist i or higher by the specialist is oth PLHCP? 	at the employee should be examined if the chest X-ray is classified as 1/0 e B reader, or if referral to a erwise deemed appropriate by the		
	13.	Additional Examinations	5		
		f the PLHCP's written of be examined by a spec available to the employon nedical opinion?	opinion indicates that the employee ialist, is such examination made ee within 30 days after receiving the		
	14.	s the specialist provide be given to the PLHCP'	ed the same information required to ?		
	15.	s the specialist instruct employee and provide e nedical report within 30	ed to explain the results to the each employee with a written) days of the examination?		
	16.	Does the written medica	al opinion include:		
		a. The results of the any medical constrained on the second secon	he medical examination including ndition(s) that would place the creased risk of material impairment exposure to respirable crystalline		
		a. Any medical co evaluation or tro	ndition(s) that require further eatment?		
		b. Any recommen	ded limitations on respirator use?		
		c. Any recommen exposure to res	ded limitations on the employee's spirable crystalline silica?		
	17.	Has the specialist provi company within 30 days	ded a written medical opinion to the s of the examination?		
	18.	Does the written medican	al opinion included the following		

F.	Medical Surveillance				No
		a.	The date of the examination?		
		d.	A statement that the examination has met the medical surveillance requirements of the OSHA respirable crystalline silica standard(s)?		
		e.	Any recommended limitations of the employee's use of respirators?		
	19.	Medica	al Surveillance Records		
		Has the for emp require Standa	e company made and maintained an accurate record ployee covered by the medical surveillance ments of the OSHA Respirable Crystalline Silica urds?		
	20.	Does e the em	each record contain the following information about ployee:		
		a.	Name and social security number:		
		b.	A copy of the PLHCP's and specialist's written medical opinion?		
		C.	A copy of the information provided to the PLHCPs and specialists?		
	21.	Are the accord	e medical records maintained and made available in ance with OSHA standard 29 CFR 1910.1020?		

G. Training Pro	grar	n		Yes	No
Employee training is an integral part of any safety and health program.	1.	Has a develo	training program for the prevention of Silica been ped and implemented?		
Per the OSHA Hazard Communication Standard and Silica Standards, a training	2.	Are all the OS	employees exposed to respirable silica at or above HA Action Level included in the training program?		
program and Safety Data Sheets are required to inform employees about the hazards of crystalline	3.	Do nev orienta	v employees receive the training as part of their tion?		
silica, the controls implemented to prevent overexposure, and	4.	Does t informa	he training program cover at least the following ation:		
precautions to take in areas of potential exposure. For the audit, review the written program and training records		a.	The health hazards associated with exposure to respirable crystalline silica (e.g., cancer, lung effects, immune system effects, and kidney effects)?		
		b.	The increased risk of impaired health due to the combination of smoking and respirable silica dust exposure?		
		C.	The specific tasks in the workplace that could result in exposure to respirable crystalline silica?		
		d.	Specific measures implemented to protect employees from exposure to respirable crystalline silica including engineering controls, work practice controls and respirators to be used.		
		e.	Contents of the OSHA Respirable Crystalline Silica standards?		
		f.	The purpose and a description of the medical surveillance program?		
		g.	Instruction about obeying signs that mark the boundaries of regulated areas containing crystalline silica.		

G. Training Program			Yes	No
	h.	The purpose of respiratory protection, with instruction on fitting, use and care.		
	i.	Availability and location of written procedures and health information, such as the Safety Data Sheets, and the company's Silica Control Program.		
6. A	re re	cords of employee training maintained?		

Table 1: Particulate Respirators - NIOSH Assigned Protection Factors*					
Exposure Condition	Respiratory Protection				
Up to 5 x PEL	Quarter mask respirator				
Up to 10 x PEL	 Any air-purifying elastomeric half-mask respirator equipped with appropriate type of particulate filter.² Appropriate filtering facepiece respirator.^{2,3} Any air-purifying full facepiece respirator equipped with appropriate type of particulate filter.² Any negative pressure (demand) supplied-air respirator equipped with a half-mask 				
Up to 25 x PEL	 Any powered, air-purifying respirator with a hood or helmet and a high efficiency (HEPA) filter. Any continuous flow supplied-air respirator equipped with a hood or helmet. 				
Up to 50 x PEL	 Any air-purifying full facepiece respirator equipped with N-100, R-100, or P-100 filter(s). Any powered air-purifying respirator equipped with a tight-fitting facepiece (half or full facepiece) and a high-efficiency filter. Any negative pressure (demand) supplied-air respirator equipped with a full facepiece. Any continuous flow supplied-air respirator equipped with a tightfitting facepiece (half or full facepiece). Any negative pressure (demand) self-contained respirator equipped with a full facepiece. 				
Up to 1,000 x PEL	• Any pressure-demand supplied-air respirator equipped with a half-mask.				
Up to 2,000 x PEL	• Any pressure-demand supplied-air respirator equipped with a full facepiece.				
Up to 10,000 x PEL	 Any pressure-demand self-contained respirator equipped with a full facepiece. Any pressure-demand supplied-air respirator equipped with a full facepiece in combination with an auxiliary pressure-demand self-contained breathing apparatus. Dontingent upon (1) the respirator user adhering to complete program 				
requirements (such as the ones required by OSHA in 29CFR1910.134), (2) the use of NIOSH-certified respirators in					

their approved configuration, and (3) individual fit testing to rule out those respirators that cannot achieve a good fit on individual workers.

² Appropriate means that the filter medium will provide protection against the particulate in question. See step 9.2 for information on the presence or absence of oil particulates.

³ An APF of 10 can only be achieved if the respirator is qualitatively or quantitatively fit tested on individual workers.

*NIOSH Respirator Selection Logic – 2004; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; National Institute for Occupational Safety and Health.

Silica Control Program Audit Results

- 1. List below the item numbers that were answered "No" in the audit checklist.
- 2. Identify the Corrective Action that will be taken to address each item.
- 3. When the Corrective Action has been completed, fill in the Completion Date.

Example:

Item #	Corrective Action	Completion Date
A14	Make results of Silica Survey available for review	5/30/17

ltem #	Corrective Action	Completion Date

Date of Audit:

Audited By:

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