§ 1532.3. Occupational Exposures to Respirable Crystalline Silica.

(a) Scope and application. This section 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 $\mu g/m^3$) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.

(b) Definitions. For the purposes of this section the following definitions apply:

Action Level means a concentration of airborne respirable crystalline silica of 25 $\mu g/m^3$, calculated as an 8-hour TWA.

Chief means the Chief of the Division of Occupational Safety and Health, or designee.

Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

Competent Person means an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. The competent person must have the knowledge and ability necessary to fulfill the responsibilities set forth in subsection (g).

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

High-efficiency Particulate Air (HEPA) Filter means a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.

Objective Data means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity.

The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Physician or Other Licensed Health Care Professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by subsection (h).

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.

Specialist means an American Board Certified Specialist in Pulmonary Disease or an American Board Certified Specialist in Occupational Medicine.

This Section means this respirable crystalline silica standard, Section 1532.3.

(c) Specified exposure control methods. (1) For each employee engaged in a task identified on Table 1, the employer shall fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task on Table 1, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with subsection (d).

Table 1 - Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica

		Required respiratory	
		protection and mimimum	
		assigned protection factor	
Equipment/task	*Engineering and work practice control methods*	*(APF)* less than ≤4 *hours/shift*	Greater >4 Than *hours/shift*
(i) Stationary masonry saws	Use saw equipped with integrated water delivery system that	None	None.
	continuously feeds water to the blade		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		

(ii) Handheld power saws (any blade	Use saw equipped with integrated water delivery system that		
diameter)	continuously feeds water to the blade		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions:		
	-When used outdoors	None	APF 10.
	-When used indoors or in an enclosed area	APF 10	APF 10.
(iii) Handheld power saws for cutting	For tasks performed outdoors only: Use saw equipped with	None	None.
fiber-cement board (with blade	commercially available dust collection system		
diameter of 8 inches or less)			
	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		
(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	None	None.
	-When used indoors or in an enclosed area	APF 10	APF 10.
(v) Drivable saws	For tasks performed outdoors only:		
	Use saw equipped with integrated water delivery system that	None	None.
	continuously feeds water to the blade		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
(vi) Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that	None	None.
	supplies water to cutting surface		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
(vii) Handheld and stand-mounted	Use drill equipped with commercially available shroud or cowling	None	None.
drills (including impact and rotary	with dust collection system		
hammer drills)			
	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		
	Use a HEPA-filtered vacuum when cleaning holes		
(viii) Dowel drilling rigs for concrete	For tasks performed outdoors only:		
	Use shroud around drill bit with a dust collection system. Dust	APF 10	APF 10.
	collector must have a filter with 99% or greater efficiency and a		
	filter-cleaning mechanism		
	Use a HEPA-filtered vacuum when cleaning holes		
(ix) Vehicle-mounted drilling rigs for	Use dust collection system with close capture hood or shroud around	None	None.
rock and concrete	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	None	None.
	suppression on drill bit		
(x) Jackhammers and handheld	Use tool with water delivery system that supplies a continuous stream		
powered chipping tools	or spray of water at the point of impact:		
	-When used outdoors	None	APF 10.
	-When used indoors or in an enclosed area	APF 10	APF 10.
	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	None	APF 10.
	-When used indoors or in an enclosed area	APF 10	APF 10.
(xi) Handheld grinders for mortar	Use grinder equipped with commercially available shroud and dust	APF 10	APF 25.
removal (*i.e.*, tuckpointing)	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		
		None	None.

(xii) Handheld grinders for uses	For tasks performed outdoors only: Use grinder equipped with		
other than mortar removal	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	None.
	-When used indoors or in an enclosed area	None	APF 10.
(xiii) Walk-behind milling machines	Use machine equipped with integrated water delivery system that	None	None.
and floor grinders	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	None	None.
	the manufacturer		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	Dust collector must provide the air flow 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		
(xiv) Small drivable milling	Use a machine equipped with supplemental water sprays designed to	None	None.
machines (less than half-lane)	suppress dust. Water must be combined with a surfactant		
	Operate and maintain machine to minimize dust emissions		
(xv) Large drivable milling machines	For cuts of any depth on asphalt only: Use machine equipped with	None	None.
(half-lane and larger)	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	None	None.
	and supplemental water sprays designed to suppress dust		
	Operate and maintain machine to minimize dust emissions		
	OR		
	Use a machine equipped with supplemental water spray designed to	None	None.
	suppress dust. Water must be combined with a surfactant		
	Operate and maintain machine to minimize dust emissions		
(xvi) Crushing machines	Use equipment designed to deliver water spray or mist for dust	None	None.
	suppression at crusher and other points where dust is generated (*e.g.,*		
	hoppers, conveyers, 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		

(xvii) Heavy equipment and utility	Operate equipment from within an enclosed cab When employees	None	None.
vehicles used to abrade or	outside of the cab are engaged in the task, apply water and/or		
fracture silica-containing materials	dust suppressants as necessary to minimize dust emissions		
(*e.g.*, hoe-ramming, rock ripping)			
or used during demolition activities			
involving silica-containing			
materials			
(xviii) Heavy equipment and utility	Apply water and/or dust suppressants as necessary to minimize dust	None	None.
vehicles for tasks such as grading	emissions OR		
and excavating but not including:			
Demolishing, abrading, or fracturing	When the equipment operator is the only employee engaged in the	None	None.
silica-containing materials	task, operate equipment from within an enclosed cab		

(2) 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:

1. Is maintained as free as practicable from settled dust;

2. Has door seals and closing mechanisms that work properly;

3. Has gaskets and seals that are in good condition and working properly;