

Controlling Silica Exposures

Equipment/Task	Engineering Control Method Required		To be in compliance with this table, the engineering controls and work practices specified below are required to be followed fully and completely.	Respirator Requirement and Minimum Assigned Protection Factor (APF)		
	Integrated Water Delivery	Dust Collection System		No Respirator Required	APF 10	APF 25
 Stationary Masonry Saws	X		Use saw equipment with integrated water delivery system that continuously feeds water to the blade.	Outdoors	X	
				Indoors	X	
 Handheld Power Saws (any blade diameter)	X		Use saw equipment with integrated water delivery system that continuously feeds water to the blade.	Outdoors	0-4 Hrs	4+ Hrs
				Indoors		Always
 Handheld Power Saws (for cutting fiber-cement board blade diameter of 8 inches or less)		X	Use saw equipment with commercially available dust collection system. Dust collector must provide the airflow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.	Outdoors	X	
				Indoors	DO NOT USE INDOORS	
 Walk-Behind Saws	X		Use saw equipment with integrated water delivery system that continuously feeds water to the blade.	Outdoors	X	
				Indoors		Always
 Drivable Saws	X		Use saw equipment with integrated water delivery system that continuously feeds water to the blade.	Outdoors	X	
				Indoors	DO NOT USE INDOORS	
 Rig-Mounted Core Saws or Drill	X		Use saw equipment with integrated water delivery system that continuously feeds water to the blade.	Outdoors	X	
				Indoors	X	
 Handheld and Stand-Mounted Drills (including impact & rotary hammer drills)		X	Use drill equipment with commercially available shroud or cowling with dust collection system. 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 with cleaning holes.	Outdoors	X	
				Indoors	X	
 Dowel Drilling Rigs for Concrete		X	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.	Outdoors		Always
				Indoors	DO NOT USE INDOORS	
 Vehicle-Mounted Drilling Rigs for Rock and Concrete	X	or X	Use dust collection system with close capture hood or shroud around drill 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.	Outdoors	X	
				Indoors	X	
 Jackhammers and Handheld Powered Chipping Tools	X	or X	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact or use tool equipped with commercially available shroud and dust collection system. 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.	Outdoors	0-4 Hrs	4+ Hrs
				Indoors		Always
 Handheld Grinders for Mortar Removal (tuck-pointing)		X	Use grinder equipped with commercially available shroud and dust collection system. 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.	Outdoors		0-4 Hrs 4+ Hrs
				Indoors		0-4 Hrs 4+ Hrs
 Handheld Grinders for Uses Other than Mortar Removal	X	or X	Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface or use grinder equipped with commercially available shroud and dust collection system. 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.	Outdoors	X	
				Indoors	0-4 Hrs	4+ Hrs
 Walk-Behind Milling Machines and Floor Grinders	X	or X	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface or use machine equipped with dust collection system recommended by the manufacturer. 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 HEPA-filtered vacuum to remove loose dust in between passes.	Outdoors	X	
				Indoors	X	
 Small Drivable Milling Machines	X		Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant.	Outdoors	X	
				Indoors	X	
 Large Drivable Milling Machines Half-Lane and Larger	X	or X	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. 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, or use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.	Outdoors	X	
				Indoors	X	
 Crushing Machines	X		Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (hoppers, conveyors, sieves/sizing or vibrating components and discharge points). Use a ventilated booth that provides fresh, climate-controlled air to the operator or a remote control station.	Outdoors	X	
				Indoors	X	
 Heavy Equipment and Utility Vehicles Used to Abrade or Fracture Silica-Containing Materials or Used During Demolition Activities Involving Silica-Containing Materials	Use water as needed. See note to the right.		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.	Outdoors	X	
				Indoors	X	
 Heavy Equipment and Utility Vehicles for Tasks such as Grading and Excavating but not Including: Demolishing, Abrading, or Fracturing Silica-Containing Materials	Use water as needed. See note to the right.		Apply water and/or dust suppressants as necessary to minimize dust emissions. When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	Outdoors	X	
				Indoors	X	

See also: OSHA Standard: 1926.1153 Respirable Crystalline Silica, Table 1. Always operate and maintain tool in accordance with manufacturer's instruction to minimize dust emissions. HEPA Filter: Filter that is at least 99% efficient.

For tasks not listed in the table above, or where engineering controls, work practices, and respiratory protection are not fully and/or properly implemented, exposure assessments shall be performed when the exposure to respirable crystalline silica is at or above the action level of 25 micrograms per cubic meter.

Operating manuals for tools/equipment are required to be on site and available for reference.

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