Occupational Exposure to Respirable Crystalline Silica for Construction – Specified Exposure Control Methods – Request for Information (RFI)

Summary

OSHA is requesting information on the effectiveness of engineering and work practice control methods not currently included for the tasks and equipment listed on Table 1 of the Respirable Crystalline Silica standard for construction. The agency is also requesting information on tasks and equipment involving exposure to respirable crystalline silica that are not currently listed on Table 1, along with information on the effectiveness of engineering and work practice control methods in limiting worker exposure to respirable crystalline silica when performing those tasks. This RFI requests comment and information, including exposure data, which could assist the agency in assessing whether revisions to the standards may be appropriate.

Additional Exposure Control Methods for Equipment or Tasks Listed on Table 1

OSHA requests information and data on the effectiveness of the following control methods for reducing respirable crystalline silica exposure for equipment and tasks listed on Table 1

Equipment/Task	Current/Existing Engineering and Work Practice Control Methods	Additional/Proposed Engineering and Work Practice Control Methods
Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade.	Commercially available dust collection systems
Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade.	Commercially available dust collection systems *(*Including handheld masonry saws)* Commercially available dust collection systems equipped with cyclonic pre-separators—instead of filter-cleaning mechanisms **Floor fans or pedestal fans positioned to disperse dust away from workers when using handheld power tools*

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Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade.	Commercially available dust collection systems *(*including ''soft cut'' saws used for cutting ''green'' concrete (i.e., concrete that has set but has not fully cured)*
Drivable saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade.	Commercially available dust collection systems
Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that supplies water to cutting surface.	Commercially available dust collection systems
Handheld and stand-mounted drills (including impact and rotary hammer drills)	Use drill equipped with commercially available shroud or cowling with dust collection system. 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.[1]	Integrated water delivery systems Commercially available dust collection systems incorporating hollow drill bits *(*including information on any relationship between the drill bit size and the amount of airborne respirable crystalline silica generated or the performance of engineering controls)* Commercially available dust collection systems, with or without filter-cleaning mechanisms, for cordless handheld drills Commercially available dust collection systems equipped with cyclonic pre-separators—instead of filter-cleaning mechanisms **Floor fans or pedestal fans positioned to disperse dust away from workers when using handheld power tools*

[1] Compressed air can be used to clean holes when used in conjunction with a HEPA-filtered vacuum to capture the dust or a hole cleaning kit designed for use with compressed air.

Dowel drilling rigs for concrete	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. Use a HEPA-filtered vacuum when cleaning holes.[2]	Integrated water delivery systems for dowel drilling rigs *(*including information on any relationship between drill bit size and the amount of airborne respirable crystalline silica generated or the performance of engineering controls)*
Jackhammers and handheld powered chipping tools	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.	Commercially available dust collection systems equipped with cyclonic pre-separators—instead of filter-cleaning mechanisms **Floor fans or pedestal fans positioned to disperse dust away from workers when using handheld power tools*
Walk-behind milling machines and floor grinders	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	Commercially available dust collection systems equipped with cyclonic pre-separators—instead of filter-cleaning mechanisms
Other	Any other exposure control methods that you believe should be included for equipment or tasks listed on Table 1.	

<u>OSHA requests that submissions of exposure monitoring data include the following information, where possible</u>

- <u>*Description of task*</u>: A description of the task(s) performed, and work practices followed during the exposure monitoring, including any housekeeping measures, as well as job titles and number of workers monitored during the task(s). The description should also include information regarding the frequency and duration of the task being performed. For example, the description should report the number of times a task (e.g., drilling holes in concrete) was performed during the exposure monitoring period.

[2] Compressed air can be used to clean holes when used in conjunction with a HEPA-filtered vacuum to capture the dust or a hole cleaning kit designed for use with compressed air.

- *Description of equipment*: Indicate the make and model of the equipment used to perform the task. Provide a copy of equipment manufacturer's instructions, if available.
- *Description of engineering and work practice control methods*: Indicate the make and model of any equipment used to control exposures, as well as information on the condition (e.g., intact hoses, connections) and maintenance of the equipment. For vacuum dust collection systems, indicate the air flow rate, type of filter, and filter cleaning mechanism, if any. For water delivery systems, indicate the water source, volume, and flow rate. Provide a copy of the control equipment manufacturer's instructions, if available. If a work practice control was used to control exposures, describe the work practices that were implemented in as much detail as possible.
- *Description of materials*: Describe the material worked on during the task(s) and indicate its crystalline silica content, if possible. When working with concrete or other materials with characteristics that may change over time, please note how long a substrate was cured before starting work.
- *Description of environmental conditions*: Characterize the environmental conditions during monitoring, such as whether the work was performed outdoors, indoors, or in an enclosed area with restricted air flow. For work performed indoors, describe the size of the room. For work performed outdoors, note weather conditions such as temperature, humidity, and precipitation, as well as the presence of water in the soil or on surfaces. Also note the presence of natural or mechanical ventilation, such as air movement caused by the wind; doors or windows (open or closed and their number and sizes); or ventilation systems for heating and cooling and whether they were operational during monitoring.
- *Sampling and analytical procedures*: Describe sampling results, sampling and analytical methods (e.g., OSHA ID–142; NMAM 7500), and the devices used to obtain samples. Indicate the sampling duration and whether the samples represent a personal breathing zone or a well-defined area. While OSHA requests all sampling results, it is especially interested in personal breathing zone samples with a duration of 120 minutes or greater. Report the detection limit and air volume where the concentration of respirable crystalline silica falls below the limit of detection. Indicate whether a laboratory that analyzes air samples for respirable crystalline silica in accordance with Appendix A of the silica standards evaluated the samples. Please present sample results in units of micrograms of respirable crystalline silica per cubic meter of air.

Additional Equipment or Tasks to Include on Table 1

OSHA requests information and data on the effectiveness of the following exposure control methods for equipment or tasks not listed on Table 1

- Commercially available dust collection systems for power sanders (e.g., belt sanders, orbital sanders)

- Commercially available dust collection systems for power paint scrapers
- Commercially available hoods with dust collection systems for reciprocating saws
- Integrated water delivery systems for wire saws
- Wet methods, commercially available dust collection systems, commercially available dust suppression compounds, or work practices that minimize generation of dust for clean-up tasks, including changing or cleaning filters in dust collection systems

OSHA requests information and data on the effectiveness of ***any exposure control methods*** for the following equipment or tasks not listed on Table 1

- Mixing of dry materials containing crystalline silica (e.g., mortar, plaster, drywall compound, fireproofing, exterior insulation and finishing system base and finish coats)
- Application of shake (e.g., coloring and/or texturizing material) on poured concrete floors
- Use of chainsaws to cut silica-containing materials
- Use of powered sweepers (e.g., trucks equipped with rotating brushes) to clean surfaces
- Application of dry-mix or wet-mix shotcrete
- Drywall finishing; OSHA did not include drywall finishing on Table 1 because use of drywall compounds containing silica only as a trace contaminant was generally expected to result in low exposures even without additional controls. However, the agency recognizes that some drywall finishing may involve compounds with higher or unknown silica content, or circumstances that may warrant concern for exposure above the PEL
- Demolition of silica-containing materials using manual tools (e.g., sledgehammer, mason hammer, pry bar, chisel)
- Any other equipment or task you believe should be included on Table 1

Additional Requests

- OSHA requests information on stakeholders' experience with Table 1 controls, including:
  - Any challenging aspects of implementing specified controls;
  - Situations where specified controls were not available; and
  - Situations where specified controls were infeasible, but alternative controls were feasible and effective
- OSHA requests any alternative names used by workers or manufacturers to describe the tasks and equipment on Table 1 in different industry sectors or areas of the country
- OSHA requests information on any economic impacts that should be considered in determining whether to update Table 1 or broaden the circumstances under which general industry and maritime employers could comply with the silica standard for construction. Include quantitative safety and health benefits (e.g., information on the duration and magnitude of workers' silica exposure), cost savings (e.g., lower operations costs, more efficient use of capital, less expensive

equipment, increased productivity, decreased need for exposure monitoring), and costs (e.g., increased compliance costs, decreases in productivity, increased need for exposure monitoring)