



## Respirable crystalline silica

### OSHA's proposed rule could create serious risks of falls

July 1, 2014

The Occupational Safety and Health Administration (OSHA) recently proposed a rule to amend its existing standards for occupational exposure to respirable crystalline silica. For a majority of roofing workers, silica from roofing operations rarely is a matter of concern. Respirable silica may result from abrasive cutting or grinding of materials that contain quartz, clay, concrete or mortar. Currently, the rule is in the proposed rulemaking stage. Before a final rule is issued, OSHA must, among other responsibilities, address public and stakeholder comments directed to the agency regarding a variety of aspects concerning the proposed rule.

In April, NRCA Executive Vice President Bill Good testified before the agency to express concerns NRCA has regarding a number of requirements in the proposed rule and their deleterious effects on worker safety, as well as assumptions made by OSHA relating to the overall effects of the rule on the roofing industry.

#### Background

OSHA's current permissible exposure limit (PEL) for crystalline silica in construction is based on an obsolete sampling method. The method requires collection of a total respirable dust sample and calculating the portion of respirable silica in that sample in relation to its content as analyzed in the material being cut or grinded.

OSHA is proposing to set the PEL for silica in construction operations at 50 micrograms per cubic meter of air as an eight-hour, time-weighted average—a microgram is 1/1,000th of a milligram. An action level of 25 micrograms per cubic meter of air has been proposed under the rule as a trigger for exposure-monitoring provisions. Exposure monitoring is one of the more costly aspects of the proposal, but it is a conclusive method of assessing worker exposure.

According to the proposed rule, exposure monitoring may be avoided for specific construction operations detailed in OSHA's newly established Table 1, "Exposure Control Methods for Selected Construction Operations" (see the figure), but specific work practices and controls must be followed to take advantage of the exemption from air monitoring. For example, if a worker uses a gas-powered portable masonry saw equipped with an operational wet-cutting attachment that applies water to the blade to reduce dust while cutting concrete tiles, exposure monitoring is not required. However, a

worker is limited to performing cutting activities four hours or less during a workday. If a worker performs such tasks for more than four hours, the worker must use a half-mask respirator in addition to the wet-cutting method.

If a contractor does not follow the guidelines in Table 1 and performs air monitoring to assess worker exposure, engineering controls (wet-cutting methods or dust collection at the cut point) must be put in place in all instances where exposures are over the PEL. If worker exposure is not reduced to an acceptable level as determined by continued monitoring, engineering controls must be supplemented by respirators. Other proposed provisions include the establishment of regulated areas, medical surveillance, prohibition of worker rotation to reduce PELs, training and record keeping.

#### NRCA's concerns

In contrast to other trades OSHA seeks to regulate under the proposed silica rule, roofing workers who cut concrete or clay tiles often perform such tasks on elevated, steep-slope roof surfaces. Protecting workers exposed to silica during cutting or grinding operations is of paramount importance to NRCA but must be achieved in the context of overall job-site safety, taking into consideration other significant hazards such as the risk of falls.

According to the Bureau of Labor Statistics' most recent data, falls continue to be the leading cause of death for workers in the roofing industry—falls are responsible for three out of four fatalities suffered by roofing workers. Under OSHA's proposed rule, engineering controls would be required in most cases where roofing tiles are being cut, and respirator use often would be required in addition to engineering controls, creating serious and dangerous risks of falls.

Dust collection requires using a vacuum and its cord and hose, introducing tripping hazards on a roof. With the addition of water, wet cutting likely is more dangerous and an obvious slip hazard on a sloped working surface—not to mention the additional hose from the water supply. To further add to the fall risks, workers also may be encumbered by a half-mask respirator in both engineering control instances, limiting field of vision and movement.

Wet cutting on the ground may appear to be a simple solution;

Protecting workers  
must be achieved in  
the context of overall  
job-site safety

Operation	Engineering and work practice control methods	Required air-purifying respirator (minimum assigned protection factor)	
		≤ 4 hours a day	> 4 hours a day
Using hand-held masonry saws	Use water-fed system that delivers water continuously at the cut point		
	Used outdoors	None	Half-mask (10)
	Used indoors or within partially sheltered area	Half-mask (10)	Half-mask (10)
	OR		
	Use saw equipped with local exhaust dust-collection system		
	Used outdoors	Half-mask (10)	Half-mask (10)
	Used indoors or within partially sheltered area	Full face piece (50)	Full face piece (50)
	NOTE—Additional specifications: <ul style="list-style-type: none"> <li>• Prevent wet slurry from accumulating and drying.</li> <li>• Operate equipment such that no visible dust is emitted from the process.</li> <li>• When working indoors, provide sufficient ventilation to prevent buildup of visible airborne dust.</li> <li>• Use dust collector in accordance with manufacturer specifications.</li> </ul>		

Excerpted from OSHA’s Table 1, “Exposure Control Methods for Selected Construction Operations”

however, this practice requires a worker or workers to repeatedly climb and dismount a ladder during the installation process. Industry data shows a significant portion of falls in the roofing industry involves ladders. Therefore, NRCA believes exposing workers to more opportunities to fall from ladders is unnecessarily risky.

During Good’s testimony before OSHA, he said: “Ours is

a unique industry with unique hazards, and a one-size-fits-all approach to reducing silica exposures not only won’t work for us but will likely, in fact, create other hazards that are more immediate and life-threatening.”

NRCA believes the central flaw in the approach OSHA proposes—applying a “solution” centered on feasible engineering controls alone—is a result of its narrow view of feasibility. NRCA firmly believes feasible application of the hierarchy of controls, including engineering controls, must account for the nature and extent of all risks being controlled—paramount among these risks is the risk of falls.

### Going forward

NRCA believes the proposed federal silica rule could significantly be improved by applying the same approach employed by California’s OSHA (CalOSHA) when it developed its silica exposure standard. During its investigative process, CalOSHA included appropriate industry stakeholders and concluded the unique nature of roofing work made necessary an exception to the requirement for dust reduction systems in “rooftop operations with roofing tile, roofing pavers or similar materials.” This approach seems equally effective for the federal rule for the purpose of keeping workers safe from serious fall hazards but still addressing the silica exposure by other control measures; NRCA has suggested a similar accommodation be made for the roofing industry under OSHA’s federal rulemaking.

NRCA continues to partner with the Tile Roofing Institute in this effort to infuse reasonableness and practicality to the proposed OSHA rule. In addition, NRCA plans to conduct further testing of recently manufactured, new equipment to purportedly eliminate silica exposure during certain construction operations. NRCA expects to share the results of such testing with OSHA in the hopes of achieving a suitable revision to a final silica rule that may be published in the future. For more information, please contact Harry Dietz, NRCA’s director of risk management, at (847) 493-7502 or [hdietz@nrca.net](mailto:hdietz@nrca.net).

**Harry Dietz** is NRCA’s director of risk management.

