Regulatory Compliance

Look to OSHA Inspections to Reduce Silica Dust Exposure

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With roughly 100 OSHA silica-related inspections now on record, here's a look at takeaways that can help general industry facilities reduce the danger to their workers from harmful silica dust exposure.

There are definitely lessons to be learned from reviewing the top 10 violations cited by the Occupational Safety and Health Administration since the silica dust exposure rules for general industry took effect in June 2018.

In all, OSHA has conducted about 100 silica exposure inspections at general industry facilities. Here are the 10 most frequently cited violations of the ***respirable crystalline silica standard, 1910.1053*** to date:

1. Exposure assessment—1910.1053(d)(1).
2. Permissible exposure limit—1910.1053(c).
3. Written exposure control plan—1910.1053(f)(2)(i).
4. Engineering or practice control—1910.1053(f)(1).
5. Hazard communication—1910.1053(j)(1).
6. Medical surveillance—1910.1053(i)(1)(i).
7. Establishment of regulated areas—1910.1053(e)(1).
8. Employee information and training—1910.1053(j)(3)(i).
9. Scheduled monitoring option—1910.1053(d)(3)(i).
10. Signs—1910.1053(j)(2).

Even minimal exposure has the potential to induce severe illness, which led OSHA to roll out ***interim enforcement guidance*** for construction businesses in 2017 and then for general industry and maritime last summer.

"Inhaling crystalline silica can lead to serious, sometimes fatal illnesses including silicosis, lung cancer, tuberculosis (in those with silicosis) and chronic obstructive pulmonary disease," notes The Center for Construction Research and Training on its ***Silica Safe site***. "In addition, silica exposure has been linked to other illnesses including renal disease and other cancers."

To help set up and manage your dust control program, here's a ***silica safety checklist***.

What's Involved in a Silica Dust Risk Assessment

Given that OSHA's inspections turned up issues with exposure assessments as the No. 1 violation of the silica standard, it's an area that facilities need to zero in on—particularly since it's the linchpin for determining actions necessary to protect workers.

Common Sources of Respirable Crystalline Silica

"Any occupation where the earth's crust is disturbed can cause silicosis," *explains the American Lung Association*. "A long list of occupations are known that expose workers to crystalline silica that is inhaled."

The association identifies the following as work that's likely to produce silica dust and expose workers to the risk of developing silicosis:

- Mining, such as coal and hard rock mining.
- Construction work.
- Tunnel work.
- Masonry.
- Sand blasting.
- Glass manufacturing.
- Ceramics work.
- Steel industry work.
- Quarrying.
- Stone cutting.

Silica dust risk assessments remain one of the trickiest issues.

"Exposure monitoring for respirable crystalline silica may require the services of an industrial hygienist or other qualified consultant to conduct the air sampling, submit the samples for laboratory analysis and prepare a report with the sampling results," an OSHA spokesperson advises.

All general industry businesses must assess whether their workers perform tasks that could result in exposure to respirable crystalline silica dust above the action level of 25 µg/m^3 as an eight-hour, time-weighted average.

If materials containing crystalline silica are cut, drilled or otherwise processed in a manner that creates airborne dust, then per the standard a business should conduct air monitoring to measure employee exposure levels. A business can only avoid an assessment if it can provide "objective data that exposures do not exceed the action level," the OSHA spokesperson says.

If the sample results indicate employee exposures are above the permissible exposure limit (PEL) of 50 µg/m^3, then engineering controls and work practices must be implemented to reduce exposure to the lowest feasible level.

What's more, the OSHA rules require that *respiratory protection* be worn until the results of periodic monitoring indicate exposures have been reduced to below the PEL.

Get PPE selection pointers on how to find the right type of respirator.

Why Silica Dust Exposure Risk Assessments Matter

OSHA notes that the assessments are critical and central to compliance because they:

- Determine the extent and degree of exposure at the worksite.
- Identify the potential for overexposure.
- Identify the sources of exposure.
- Allow employers to collect exposure data so that they can select the proper control methods to use, such as engineering controls or respiratory protection.
- Allow employers to evaluate the effectiveness of selected control methods.

The standard provides two options for assessing exposure: the performance option—1910.1053(d)(2)—in which the employer would use objective data for conditions similar to those in their establishment, and the scheduled monitoring option—1910.1053(d)(3)—in which the business conducts its own sampling. OSHA details the options in a ***response to an industry query*** seeking clarification about silica dust monitoring.

"The value of your exposure assessments could get lost in the shuffle," points out Greg Zigulis, a health, safety and environmental consultant, in an ***article for Occupational Health & Safety***, "especially if employees work interchangeably throughout a facility, pull from utility teams or have tasks that create exposure for only a small fraction of the workday."

To Improve Compliance, Rethink Silica Training and Safety Signage

As with many safety issues, there is crossover with other common OSHA violations when it comes to ensuring worker safety from exposure to toxic silica dust.

As noted, violations of the hazard communication standard—1910.1053(j)(1)—were among the most frequently cited violations found during the initial silica-related inspections.

"Inspectors have determined that employers have deficiencies in their hazard communication programs," the OSHA spokesperson says. The rules require that businesses include information about respirable crystalline silica in their overall hazard communication programs—for labels on containers, in safety data sheets and through worker training.

"Employers are also commonly cited for not providing information and training to employees," the OSHA spokesperson notes.

Employers need to ensure that their employees can demonstrate knowledge and understanding on the following silica matters at minimum:

- Health hazards associated with respirable crystalline silica.
- Specific tasks that could result in exposure to silica dust.
- Specific measures to protect employees from exposure, including engineering controls, work practices and respirator use.
- Purpose and description of a medical surveillance program.

"These violations represent the most commonly encountered crossovers with the ***OSHA top 10 violations*** for all other hazards," the OSHA spokesperson says.

How has your business used training to help comply with the OSHA silica dust rules?

