

Silica Exposure in General Industry

Exposure Assessment—Performance Option

5-Minute Talk

Overview of topic

The performance option gives employers flexibility to determine the 8-hour TWA exposure for each employee based on any combination of air monitoring data or objective data that can accurately characterize employee exposures to silica.

Air monitoring data are any results of air monitoring (analyzed according to the procedures and requirements in Appendix A) that the employer has done to meet the requirements of the standard.

Objective data is information that demonstrates employee exposure to silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions that closely resemble or could result in higher exposures than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Examples of objective data

Examples of objective data are information such as:

- Air monitoring data from industry-wide surveys,
- Calculations based on the composition of a substance,
- Area sampling results and exposure mapping profile approaches, and
- Historic air monitoring data.



Requirements for the performance option

Employers choosing the performance option must:

- Conduct the exposure assessment before work begins;
- Reassess exposures whenever a change in production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or higher exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred;
- Be able to demonstrate that employee exposures have been accurately characterized; and
- Make sure that the exposure assessment reflects the exposures of employees on each shift, for each job classification, in each work area.

Why use the performance option?

The performance option may be especially useful when measuring employee exposures is challenging, such as when tasks are conducted for short durations of time or performed under different weather conditions.

The performance option gives employers flexibility for characterizing the exposures of all employees. For example, instead of conducting air monitoring on two employees who perform the same job on different shifts, the employer could determine that there are no differences in exposure between those two employees, and characterize the exposure of the second employee based on the air monitoring results of the first employee.

Under the performance option, employers can characterize employee exposure within a range to account for exposure variability. Employers can also use that option to show that exposures exceed the PEL by a certain level, such as less than 10 times the PEL, after using all feasible controls. The employer would then know that he or she must provide respiratory protection with an APF of at least 10, as well as medical surveillance for employees required to wear a respirator under the silica standard for 30 or more days per year.

Training tips

Explain the types of objective data you have used to determine exposure to silica.

Where to go for more information

29 CFR 1910.1053(d)(2)—Performance option

