



Occupational Exposure to Respirable Crystalline Silica Frequently Asked Questions for General Industry

On January 22, 2019, the Occupational Safety and Health Administration (OSHA) published Frequently Asked Questions (FAQs) to provide guidance to employers on application of OSHA's final rule regulating occupational exposure to respirable crystalline silica in general industry. OSHA developed the FAQs in consultation with the American Foundry Society and the National Association of Manufacturers. This provides a short summary of the key interpretations from the FAQs. Members are encouraged to review the entire document.

Scope and Application (29 C.F.R. § 1910.1053(a))

The standard applies to all occupational exposures to respirable crystalline silica, except the standard does not apply to: (1) construction work; (2) agricultural operations; and (3) exposures that result from the processing of sorptive clays. In addition, the standard does not apply where the employer has objective data demonstrating that employee exposure to silica will remain below the action level (AL) of 25 $\mu\text{g}/\text{m}^3$ measured as an 8-hour TWA under any foreseeable conditions.

The FAQs clarify that:

- In assessing whether certain activities are outside the scope of the standard, an employer does not necessarily need to assess exposures in the *complete* absence of controls. The intent of the standard is to exempt conditions where employees will be exposed to minimal levels of silica under any foreseeable conditions. Although engineering controls are usually a reliable means of limiting employee exposures, equipment does occasionally fail. As a result, OSHA considers the failure of most controls to be a foreseeable condition and thus employers should consider this when making their assessments. However, OSHA states that failure of some types of controls (e.g., substitution of non-silica-containing materials, fixed walls) is not possible or so improbable that it is not a foreseeable condition, and therefore employers need not account for the potential failure of such controls when determining coverage.
- In determining whether the standard applies, employers also do not need to disable, remove, or otherwise account for the potential failure of measures that may contribute, in a limited fashion, to reducing silica exposures, but that are not adopted for that specific purpose, i.e., general building ventilation or HVAC systems.

Exposure Assessments (29 C.F.R. § 1910.1053(d))

The standard requires employers to ensure that no employee is exposed to an airborne concentration of silica in excess of the permissible exposure limit (PEL) of 50 $\mu\text{g}/\text{m}^3$, calculated as an 8-hour TWA. Employers must assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the AL using either a performance option or a scheduled monitoring option.

The FAQs clarify that:

- In assessing exposures, the employer has the option of switching from the scheduled monitoring option to the performance option, and can use air monitoring data generated during scheduled monitoring to fulfill the performance option assessment requirements.
- The term “objective data” means information demonstrating employee exposure to silica associated with a particular product or material or a specific process, task, or activity. Types of data that may qualify include: data from industry-wide surveys, equipment manufacturers, or trade associations; exposure mapping; calculations based on substance composition or chemical and physical properties; and historical air monitoring data.
- Employers do not need to sample *every* employee when using the scheduled monitoring option. Where several employees perform the same tasks on the same shift and in the same work area, employers may sample a representative fraction of these employees.
- The standard does not prohibit employers from requiring employees to wear personal samplers as a condition of employment, however, other state or federal laws or regulations, or collective bargaining agreements, may apply.

Regulated Areas (29 C.F.R. § 1910.1053(e))

The standard requires employers to establish regulated areas wherever an employee’s exposure to airborne concentrations of respirable crystalline silica is, or can reasonably be expected to be, in excess of the PEL. Employers must demarcate regulated areas from the rest of the workplace and post signs with a specified legend at all entrances to regulated areas. Employers must limit access to regulated areas and provide, and require the use of, an appropriate respirator for each employee and designated representative who enters a regulated area.

The FAQs clarify that:

- If an employer has, and adequately enforces, work rules precluding employees from entering a particular area, then the employer does not need to treat that location as a regulated area. An area also does not need to be designated as a regulated area if the employer has and enforces work rules limiting employees’ time in the area so that there is no reasonable expectation that their 8-hour TWA exposures will exceed the PEL.
- In some facilities, exposures above the PEL may be associated with an intermittent activity. Employers do not need to treat an area as a regulated area on days when employee exposures are not reasonably expected to exceed the PEL. In such cases, employers may elect to demarcate the regulated area on just a temporary basis.

Methods of Compliance (29 C.F.R. § 1910.1053(f))

The standard requires employers to use engineering and work practice controls to reduce and maintain employee exposure to silica to or below the PEL, unless they can demonstrate that such controls are not feasible. Wherever feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer must reduce exposures to the lowest feasible level through these methods, and then provide appropriate respiratory protection.

The FAQs clarify that:

- Administrative controls are an acceptable means of reducing employee exposures under the standard. An employer could reduce an employee’s exposures by scheduling high-exposure tasks to be conducted when that employee will not be working in an adjacent area. The standard also does not prohibit the rotation of employees to limit employee exposures.

Written Exposure Control Plan (29 C.F.R. § 1910.1053(f)(2))

The standard requires employers to implement a written exposure control plan that contains: (1) a description of the tasks in the workplace that involve exposure to silica; (2) a description of the engineering controls, work practices, and respiratory protection used to limit employee exposure; and (3) a description of the housekeeping measures used. The plan must be reviewed and evaluated for effectiveness at least annually and updated as necessary.

The FAQs clarify that:

- Tasks that are not covered by the standard, e.g., because the employer has objective data demonstrating that employee exposures will remain below the AL under any foreseeable conditions, do not need to be included in the written exposure control plan.
- Employers may develop a single comprehensive plan for each worksite that includes all of the silica-generating tasks that employees will perform at the worksite (i.e., employers do not need separate exposure control plans for different operations).

Housekeeping (29 C.F.R. § 1910.1053(h))

Under the standard, employers must not allow dry sweeping or dry brushing “where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.” In addition, employers must not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless (1) the compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created, or (2) no alternative method is feasible.

The FAQs clarify that:

- If an employer has objective data demonstrating that employee exposure will remain below the AL under any foreseeable conditions, the prohibition on dry sweeping, dry brushing, and the use of compressed air for cleaning clothing and surfaces does not apply
- Drivable powered industrial sweepers are not prohibited. When these types of sweepers are equipped with HEPA filters, their use is considered ‘HEPA-filtered vacuuming’ for purposes of the standard. When these types of sweepers are *not* equipped with HEPA filters, their use is considered an ‘other [housekeeping] method,’ and they are also not prohibited.
- The standard does not require employers to demonstrate that wet methods, a HEPA-filtered vacuum, or other methods are *impossible* to use in order to establish “infeasibility.” The “infeasibility” exceptions are intended to encompass situations where wet methods, HEPA-filtered

vacuuming, and other exposure-minimizing methods are not effective, would cause damage, or would create a hazard in the workplace.

- In some cases, *wet sweeping* may be infeasible where the water could: make an elevated surface slick and create a fall hazard; come into contact with electrical panels or pose an electrical hazard; come into contact with molten metal; cause the dust to harden; or adversely affect the quality of the final product. In some cases, *HEPA-filtered vacuuming* may be infeasible where: tight or obstructed spaces prevent a vacuum, hose, or nozzle from accessing or effectively cleaning the space (such as around some pipes, meters, and gauges); or very large amounts of silica-containing materials must be cleaned, and the volume of material cannot effectively be cleaned by vacuuming.

Medical Surveillance (29 C.F.R. § 1910.1053(i))

The standard requires employers to make medical surveillance available at no cost, and at a reasonable time and place, to any employee who will be occupationally exposed to respirable crystalline silica at or above the PEL (or AL after June 23, 2020) for 30 or more days a year. The examinations must include a medical and work history, a physical examination, a chest x-ray, a pulmonary function test, a test for latent tuberculosis infection (initial exam only), and any other tests deemed appropriate by the health care professional.

The employee will receive a written medical report that includes: (1) the results; (2) any recommended limitations on the employee's use of respirators; (3) any recommended limitations on the employee's exposure to silica; and (4) a statement, if applicable, that the employee should be examined by a specialist. The employer must also obtain a written medical opinion from the health care professional. This opinion contains the date of the examination, a statement that the examination has met the requirements of the standard, and any recommended limitations on the employee's use of respirators. If the employee gives written authorization, the written opinion for the employer may also contain any recommended limitations on the employee's exposure to silica and/or a statement that the employee should be seen by a specialist (if applicable).

The FAQs clarify that:

- The standard limits only the information that can be included in the health care professional's written medical opinion for the employer following an examination performed for purposes of compliance with the medical surveillance provisions of the standard. If an employer receives the information through another means (e.g., workers compensation), then the prohibition does not apply.

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