

Silica is a mineral found naturally in brick, concrete, rock and sand. Workers can breathe silica dust during activities that involve cutting, grinding, sanding, drilling or crushing these materials. The exposures to silica dust that result are common in foundries, construction, glass manufacturing and sand blasting.

Inhaling silica dust may cause silicosis. Silicosis is an incurable lung disease characterized by extreme shortness of breath, weakness, weight loss and eventually death. Silica exposure may also cause lung cancer and kidney disease, and raises the risk of contracting infectious diseases like tuberculosis. The International Agency for Research on Cancer (part of the World Health Organization) has classified crystalline silica dust as a Group 1 Human Carcinogen, the same category as asbestos. The Occupational Safety and Health Administration (OSHA) recently released a new rule on silica exposure that will better protect workers and help prevent worker illness and death.

How does the new silica rule help workers?

OSHA's new silica rule lowers the permissible exposure limit (PEL) for silica, from 100 $\mu\text{g}/\text{m}^3$ for general industry and 250 $\mu\text{g}/\text{m}^3$ for construction, to 50 $\mu\text{g}/\text{m}^3$. It also requires employers to use engineering controls to prevent exposure and to provide regular medical examinations to certain employees. In order to comply with the rule, employers must:

- Maintain a written silica exposure control plan that is available to employees upon request.
- Provide sufficient training on preventing exposure to silica dust.
- Use engineering controls, such as continuous water delivery or dust collection systems, to ensure that workers are not exposed to levels of respirable silica above the PEL of 50 $\mu\text{g}/\text{m}^3$. When engineering controls are insufficient, respirators may be used, but they should never be the first line of defense.
- Perform regular air quality testing using an accredited lab, and make the results available to employees upon request.
- Provide medical examinations to workers who are exposed to levels of silica at or above the action level of 25 $\mu\text{g}/\text{m}^3$. These exams must include a pulmonary function test and chest x-ray, and employees with abnormal results should be referred to an American Board Certified Specialist in Pulmonary Disease or Occupational Medicine. Employers must also give healthcare providers a description of an employee's job duties, history of exposure to silica and personal protective equipment (PPE). These medical exams should take place at least once every three years.

Employers in the construction industry are exempt from the new PEL of 50 $\mu\text{g}/\text{m}^3$ and the requirements for air quality testing if they can prove that they are using specific

engineering controls and following the work practices outlined in the standard. However, construction workers who wear a respirator for at least 30 days in a year are still entitled to regular medical examinations.

When does the rule take effect?

Although the rule became final on March 25, 2016, companies do not have to comply immediately. The new requirements will be phased in over several years, depending on the sector.

Sector	Compliance deadline	Exceptions
Construction industry	June 23, 2017	Compliance with air sampling quality control requirements is delayed until June 23, 2018.
General industry and maritime industry	June 23, 2018	Compliance with employee medical surveillance requirements is delayed until June 23, 2018 for employees exposed to crystalline silica at or above 50 µg/m ³ for at least 30 days in a year. It is also delayed until June 23, 2020 for employees exposed at or above 25 µg/m ³ for at least 30 days in a year.
Hydraulic fracturing industry	June 23, 2018	Compliance with employee medical surveillance requirements is delayed until June 23, 2018 for employees exposed to crystalline silica at or above 50 µg/m ³ for at least 30 days in a year. It is also delayed until June 23, 2020 for employees exposed at or above 25 µg/m ³ for at least 30 days in a year. In addition, compliance with engineering control requirements is delayed until June 23, 2021.

Who can I call if I have questions?

If you have questions about the new silica rule or the implementation timeline, contact the Health, Safety and Environment Department via phone or email. The final silica rule is also available online at <https://www.osha.gov/silica/>