

MEDIA FACT SHEET

SILICA – RISKS AND PREVENTION

The Problem for Construction Workers

Silica, often referred to as quartz, is a common mineral that is found in many materials used on construction sites, including sand, concrete, masonry, rock, granite, and landscaping materials.¹

The dust created by cutting, grinding, or drilling these materials can contain crystalline silica particles. These dust particles are very small and can travel deep into the lungs. Breathing in even small amounts over time can cause silicosis, lung cancer, or COPD, and has been linked to other diseases, including kidney disease. Silicosis is incurable and can be deadly. It can form in the lungs in as little as a few weeks of very high dust exposure.¹

The Occupational Safety and Health Administration (OSHA) estimates that approximately 2 million construction workers in the U.S. are exposed to silica on their job sites.²

In 2016, OSHA issued a new standard that requires construction employers to limit worker exposures to respirable crystalline silica. They estimate that the new standard will prevent 600 deaths a year from silica-related diseases and will prevent more than 900 new cases of silicosis each year.³

Silica Exposure is Preventable

The new standard lays out specific steps employers covered by the standard must take to protect their employees from exposure to silica above the permissible exposure limit (PEL) of 50 micrograms per cubic meter over an 8-hour work day.²

The standard gives employers the choice of either using the control methods laid out in [Table 1](#) of the construction standard, or conducting an exposure assessment. This assessment can be done by conducting air monitoring, using objective data, or a combination of the two.

The standard also requires employers to²:

- Establish and implement a written exposure control plan that identifies tasks which expose workers and methods for protecting them. This includes restricting access to work areas where high exposures may occur and designating a competent person* to implement the plan.

- Restrict the use of housekeeping practices that could expose workers to silica, such as use of compressed air without a ventilation system to capture dust and dry sweeping.
- Offer medical exams every three years to workers who are required by the standard to wear a respirator for 30 or more days per year, and ensure they receive a copy of the full medical report and a copy of the medical opinion provided to the employer.
- Train workers on the health effects of silica exposure, workplace tasks that can expose them to silica, and ways to limit exposure.
- Keep records of workers' silica exposure and medical exams.

CPWR Research and Resources

- [Work Safely with Silica](#) – CPWR's one-stop source for all things silica in construction. The site includes the [Create-A-Plan Tool](#), an easy-to-use tool that takes contractors step-by-step through conducting a job hazard analysis, selecting controls, and creating a job-specific plan to eliminate or reduce silica hazards.
- **Silica Hazard Alert Card** – a brief, image-driven handout to help workers understand how to work safely with silica. Available in [English](#) and [Spanish](#).
- **Silica Toolbox Talk** – a short discussion guide for use by foremen or supervisors to raise worker awareness and discuss site-specific actions to identify and address silica dust hazards. Available in [English](#) and [Spanish](#).
- **Studies** –
 - ◇ [Evaluation of the Efficacy and Effectiveness of Silica and Noise Controls on Concrete-Cutting Tools](#)
 - ◇ [Partnering to Prevent Exposure to Silica, Dust and Noise in Construction and Demolition](#)
 - ◇ [A Case-Control Study of Airways Obstruction Among Construction Workers](#)

* OSHA defines a "competent person" as someone "who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them."⁴

Other Resources

- [Respirable Crystalline Silica Standard for Construction](#) – OSHA Fact Sheet, 2017
- [Small Entity Compliance Guide for the Respirable Crystalline Silica Standard for Construction](#) – OSHA, 2017
- [FAQs about the Silica Standard](#) – OSHA
- [Silica](#) – National Institute for Occupational Safety and Health's [NIOSH] main website for silica.
- ["Stop Silicosis"](#) – U.S. Department of Labor video on the dangers of silica dust and why we must stop silicosis.

About CPWR

CPWR - The Center for Construction Research and Training [CPWR] is a 501(c)3 non-profit dedicated to reducing injuries, illnesses, and fatalities in construction, and currently serves as NIOSH's National Construction Center. Through research, training, and service programs, CPWR works in partnership with industry stakeholders, safety and health professionals, academics, and key government agencies, to identify and find solutions for occupational hazards and improve the safety and health of construction workers. For more information, please visit: www.CPWR.com

References

¹CPWR. *Work Safely with Silica*. <https://www.silica-safe.org/>

²Occupational Safety and Health Administration [OSHA], 2017. *OSHA's Respirable Crystalline Silica Standard for Construction*. <https://www.osha.gov/Publications/OSHA3681.pdf>

³OSHA. *Frequently Asked Questions: Respirable Crystalline Silica Rule*. https://www.osha.gov/silica/Silica_FAQs_2016-3-22.pdf

⁴OSHA, 2017. *Small Entity Compliance Guide for the Respirable Crystalline Silica Standard for Construction*. <https://www.osha.gov/Publications/OSHA3902.pdf>