

Workers' Exposure to Respirable Crystalline Silica: Final Rule Overview

More than 2 million workers gain protections from deadly dust

Background

Workplace illness takes the lives of thousands of workers each year. Those workers and their families rely on the U.S. Department of Labor's Occupational Safety and Health Administration to set and enforce standards that reduce the risk to those workers of contracting illnesses or suffering injuries on the job, so that no worker is forced to sacrifice their life or health for their livelihood. Respirable crystalline silica is particularly hazardous for the nation's workers.

Workers who inhale very small crystalline silica particles are at increased risk of developing serious — and often deadly — silica-related diseases. These tiny particles (known as “respirable” particles) can penetrate deep into workers' lungs and cause silicosis, an incurable and sometimes fatal lung disease. Crystalline silica exposure also puts workers at risk for developing lung cancer, other potentially debilitating respiratory diseases such as chronic obstructive pulmonary disease, and kidney disease. Approximately 2.3 million people in the U.S. are exposed to silica at work.

To better protect workers from dangerous crystalline silica, OSHA has finalized two new silica standards: one for general industry and maritime, and the other for construction. These rules are based on extensive review of peer-reviewed scientific evidence, current industry consensus standards, an extensive public outreach effort, and nearly a year of public comment, including several weeks of public hearings. They provide commonsense, affordable and flexible strategies for employers to protect workers in their workplaces from the serious risks posed by silica exposure.

OSHA estimates these standards will save the lives of more than 600 workers each year and prevent more than 900 cases of silicosis each year once the full effects of the rule are realized.

What is crystalline silica?

Crystalline silica is a common mineral that is found in materials that we see every day in roads, buildings, and sidewalks. It is a common component of sand, stone, rock, concrete, brick, block, and mortar.

- Exposures to crystalline silica dust occur in common workplace operations involving cutting, sawing, drilling, and crushing of concrete, brick, block, rock, and stone products (such as construction tasks), and operations using sand products (such as in glass manufacturing, foundries, sand blasting, and hydraulic fracturing).

Why do we need new silica standards?

- We have known about the dangers of silica for decades. More than 80 years ago, U.S. Secretary of Labor Frances Perkins first brought experts and stakeholders together to determine the best ways to protect workers from silica.
- OSHA's current permissible exposure limits for silica are more than 40 years old. They are based on research from the 1960s and earlier that do not reflect more recent scientific evidence.
- Strong evidence shows that the current exposure limits do not adequately protect worker health. For example, since the current exposure limits were adopted, respirable crystalline silica exposure has been found to cause lung cancer and kidney disease at the levels currently permitted.
- Many employers are already implementing the necessary measures to protect their workers from silica exposure. The technology for most employers to meet the new standards is widely available and affordable.

How will the rule protect workers?

- The rule significantly reduces the amount of silica dust that workers can be exposed to on the job. That means that employers will have

to implement controls and work practices that reduce workers' exposure to silica dust. For most activities, that means that employers will have to ensure that silica dust is wetted down or vacuumed up before workers can breathe it in.

- Employers are required under the rule to limit access to high exposure areas, provide training, provide respiratory protection when controls are not enough to limit exposure, provide written exposure control plans, and measure exposures in some cases. Employers are also required to offer medical examinations to highly exposed workers. Workers who find out they have an illness, such as lung disease, can use that information to make employment or lifestyle decisions to protect their health.

How will OSHA help employers comply with the rule to protect their workers?

- The rule provides flexibility to help employers — especially small businesses — protect workers from silica exposure, with staggered compliance dates to ensure sufficient time to meet the requirements. Employers have from one to five years to get the right protections in place.
- The rule includes special flexibility for the construction industry. For the most common tasks in construction, OSHA has spelled out exactly how to best protect workers. If employers follow those specifications, they can be sure that they are providing their workers with the required level of protection. If they have better ideas about how to provide protection, they can do that too — as long as they make sure that their methods effectively reduce their workers' exposure to silica dust.

What industries are affected?

Affected industries include:

- Construction
- Glass manufacturing
- Pottery products
- Structural clay products

- Concrete products
- Foundries
- Dental laboratories
- Paintings and coatings
- Jewelry production
- Refractory products
- Ready-mix concrete
- Cut stone and stone products
- Abrasive blasting in maritime, construction, and general industry
- Refractory furnace installation and repair
- Railroad transportation
- Oil and gas operations

Additional information

Additional information on OSHA's silica rule can be found at www.osha.gov/silica.

OSHA can provide extensive help through a variety of programs, including technical assistance about effective safety and health programs, workplace consultations, and training and education.

OSHA's On-site Consultation Program offers free and confidential occupational safety and health services to small and medium-sized businesses in all states and several territories across the country, with priority given to high-hazard worksites. On-site consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing and improving safety and health management systems. To locate the OSHA On-site Consultation Program nearest you, call 1-800-321-OSHA (6742) or visit www.osha.gov/dcsp/smallbusiness.

For more information on this and other health-related issues impacting workers, to report an emergency, fatality, inpatient hospitalization, or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov, or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



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