

OSHA's Proposed Crystalline Silica Rule: Construction

OSHA is proposing two standards to protect workers from exposure to respirable crystalline silica—one for construction, and the other for general industry and maritime—in order to allow employers to tailor solutions to the conditions in their workplaces.

About 1.85 million workers are currently exposed to respirable crystalline silica in construction workplaces. Over 640,000 of these workers are estimated to be exposed to silica levels that exceed OSHA's proposed permissible exposure limit (PEL).

These exposures occur during common construction operations such as: Using masonry saws; using hand-operated grinders; tuckpointing; using jackhammers; using rotary hammers or drills; operating vehicle-mounted drilling rigs; milling; rock crushing; drywall finishing using silica-containing material; and use of heavy equipment during earthmoving.

The proposed rule is expected to save nearly 700 lives and prevent 1,600 new cases of silicosis per year once the full effects of the rule are realized. Of these, over 560 lives would be saved and about 1,080 cases of silicosis would be prevented among construction workers.

Major Provisions of the Proposed Construction Standard

The proposed standard for construction includes provisions for employers to:

- Measure the amount of silica that workers are exposed to if it may be at or above an **action level of 25 µg/m³** (micrograms of silica per cubic meter of air), averaged over an 8-hour day;
- Protect workers from respirable crystalline silica exposures above the **PEL of 50 µg/m³**, averaged over an 8-hour day;
- **Limit workers' access** to areas where they could be exposed above the PEL;
- Use **dust controls** to protect workers from silica exposures above the PEL;

- Provide **respirators** to workers when dust controls cannot limit exposures to the PEL;
- Offer **medical exams**—including chest X-rays and lung function tests—every three years for workers exposed above the PEL for 30 or more days per year;
- **Train workers** on work operations that result in silica exposure and ways to limit exposure; and
- **Keep records** of workers' silica exposure and medical exams.

Example: Dust Controls in Construction

The most common methods of limiting silica exposures in construction tasks are wet methods, where water is used to keep silica-containing dust from getting into the air, and vacuum dust collection systems, which capture dust at the point it is made.



This rotary hammer has a built-in vacuum dust collection system. The drill bit is surrounded by a shroud that is attached to a vacuum to collect dust and bits of concrete. (Photo courtesy of DeWalt)

Flexible Alternatives for Construction

The proposed standard also provides flexible alternatives, especially useful for small employers. Employers can choose to measure their workers' exposure to silica and independently decide which dust controls work best in their workplaces. Alternately, employers can simply use a control method laid out in Table 1 of the proposed construction standard.



Using a stationary masonry saw without dust controls can expose workers to high levels of silica. Table 1 provides a simple explanation of what employers can do to keep their workers safe. (Photo courtesy of CPWR)

Table 1 matches common construction tasks with dust control methods that can be used to limit worker exposures to silica, so employers know exactly what they need to do for every job and every worker. The dust control measures listed in the table include methods that are known to be effective, like using water to keep dust from getting into the air or using ventilation to capture dust. In some operations, respirators may also be needed. If an employer chooses to use a method in Table 1, they would not need to measure workers' exposure to silica.

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.

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Example of a Flexible Alternative for Construction: Protecting Against Dust from Stationary Masonry Saws

You can use a saw with a built-in system that applies water to the saw blade. The water limits the amount of dust that gets into the air.

The employer wouldn't need to measure the amount of dust in the air, but if a worker used the saw for more than four hours per day, they would also need a half-mask respirator. If a worker used the saw for four hours or less per day, no respirator would be needed. If any worker needs to use a respirator 30 or more days a year, he or she would need to be offered a medical exam.

Table 1. Exposure Control Methods for Selected Construction Operations

Operation	Engineering and Work Practice Control Methods	Required Air-Purifying Respirator (Minimum Assigned Protection Factor)	
		≤ 4 hr/day	> 4 hr/day
Using Stationary Masonry Saws	Use saw equipped with integrated water delivery system. (Plus additional specifications)	None	Half-Mask (10)

Additional Information

You can learn more about OSHA's proposed rule, including opportunities to participate in development of the rule, by visiting OSHA's Silica Rulemaking webpage at www.osha.gov/silica.