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## SAFETY 101: OSHA'S CRYSTALLINE SILICA RULE: GENERAL INDUSTRY & MARITIME

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

### Who is affected by the general industry and maritime standard?

About 295,000 workers are exposed to respirable crystalline silica in over 75,000 general industry and maritime workplaces.

Exposure to respirable crystalline silica can cause silicosis, lung cancer, other respiratory diseases, and kidney disease.

Some of the affected industries are shown below.

Number of Workers Exposed to Respirable Crystalline Silica in Selected General Industry/ Maritime Sectors		
Industry sector	Workers currently exposed	Workers currently exposed above the new PEL
Asphalt Roofing Materials	3,158	1,410
Concrete Products	32,981	9,391
Cut Stone	9,429	5,243
Dental Laboratories	31,105	864
Foundries	34,591	12,173
Jewelry	6,772	2,434
Porcelain Enameling	4,113	1,654
Pottery	6,269	2,496
Railroads	16,895	5,340
Ready-Mix Concrete	27,123	19,941
Shipyards	3,038	2,228
Structural Clay Products	7,893	3,198
Support Activities for Oil and Gas Operations	16,960	11,207

Source: OSHA Directorate of Standards and Guidance



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OSHA estimates that over 100,000 workers in general industry and maritime are exposed to silica levels that exceed the new permissible exposure limit (PEL).

### What does the standard require?

The standard for general industry and maritime requires 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/m<sup>3</sup>** (micro grams of silica per cubic meter of air), averaged over an 8-hour day;
- Protect workers from respirable crystalline silica exposures above the permissible exposure limit of **50 µg/m<sup>3</sup>**, 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;
- Restrict **housekeeping** practices that expose workers to silica where feasible alternatives are available;
- Establish and implement a **written exposure control plan** that identifies tasks that involve exposure and methods used to protect workers;
- Offer medical exams — including chest X-rays and lung function tests — every three years for workers exposed at or above the action level 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.



*A worker cutting granite using a saw that applies water to the blade. The water reduces the amount of silica-containing dust that gets into the air.*



*A worker grinding castings in a foundry. The work is performed in a ventilated booth to reduce the worker's exposure to silica.*

### Examples — Dust control methods

In most cases, dust controls such as wet methods and ventilation can be used to limit workers' exposure to silica. These technologies are widely available, affordable and already commonly used by many employers.

### When are employers required to comply with the standard?

General industry and maritime employers must comply with all requirements of the standard by **June 23, 2018**, except for the following:



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- **Medical surveillance** must be offered to employees who will be exposed **at or above the action level** for 30 or more days a year starting on June 23, 2020. (Medical surveillance must be offered to employees who will be exposed **above the PEL** for 30 or more days a year starting on June 23, 2018.)
- **Hydraulic fracturing** operations in the oil and gas industry must implement engineering controls to limit exposures to the new PEL by June 23, 2021.

### Additional information

Additional information on OSHA's silica rule can be found at [www.osha.gov/silica](http://www.osha.gov/silica).

### Acknowledgments:

[U.S. Department of Labor, OSHA, 2016](#)



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