

OSHA Compliance: Meeting the Silica Standard for Construction



Source: OSHA 29 CFR 1926.1153



Note



This booklet contains general, overview information and should not be relied upon to make specific compliance decisions. Please consult with an Industrial Hygiene or Safety Professional for measures to be taken for specific compliance decisions.



About the Author

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What is crystalline silica ?

Quartz (silica) is found naturally in almost all rock, sand and soil.

It is also found in concrete products and bricks.

It is also found in abrasive blasting media.



Exposure and Health Risks

Exposure to respirable crystalline silica has been linked to:

- Silicosis;
- Lung cancer;
- Chronic obstructive pulmonary disease;
- Kidney and immune system disease

Silicosis is a fibrotic lung disease

The formation of scar tissue in the lungs

Potentially disabling or could result in death

Those with silicosis more susceptible to lung infections like Tuberculosis (TB)

There is no cure.



Photo courtesy of Wikipedia - Silicosis

Industries impacted

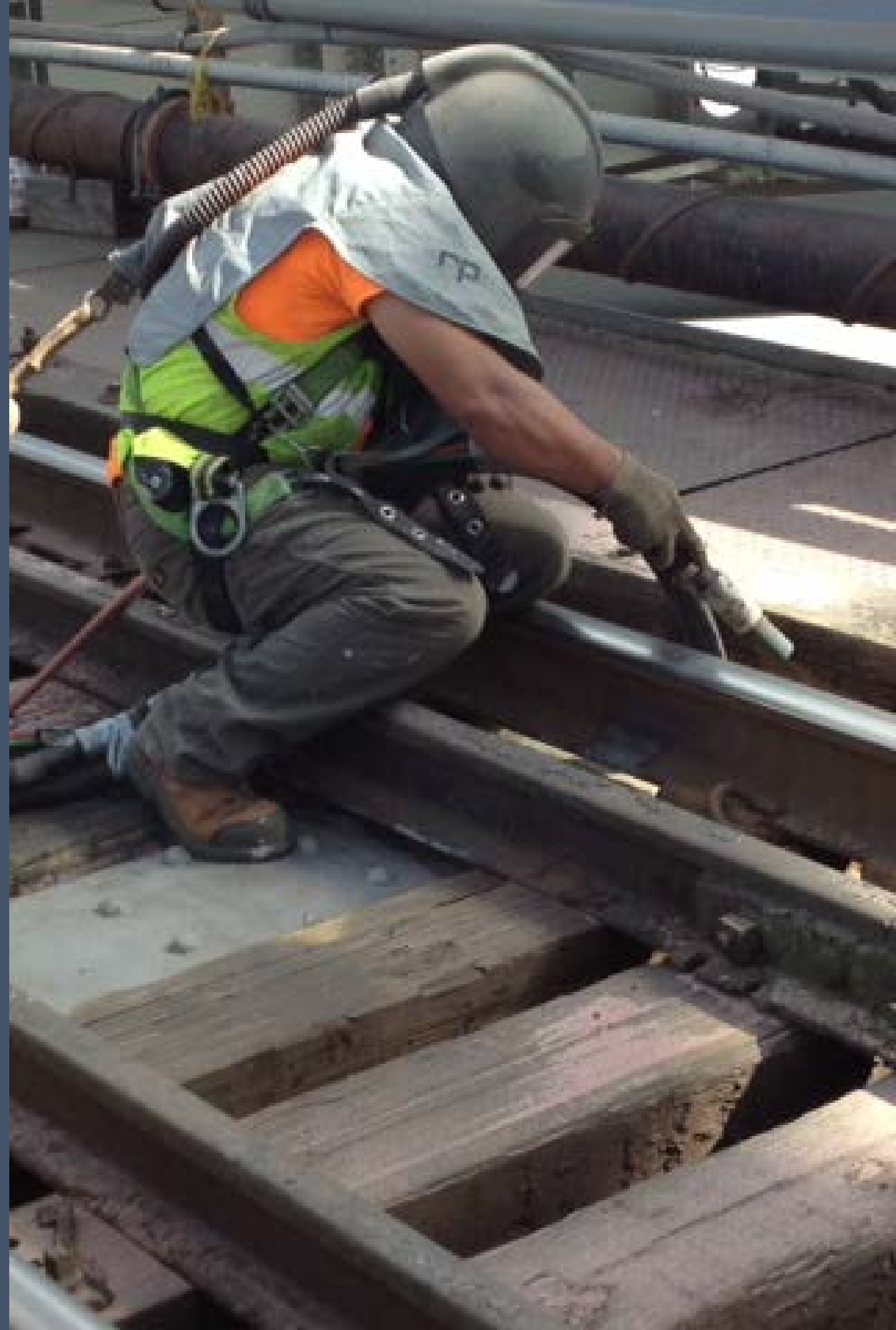
- Construction
- Glass manufacturing
- Pottery products
- Structural clay products
- Concrete products
- Foundries
- Dental laboratories
- Paintings and coatings
- Jewelry production
- Refractory products
- Asphalt products
- Landscaping
- Ready-mix concrete
- Cut stone and stone products
- Abrasive blasting in:
 - Maritime work
 - Construction
 - General industry
- Refractory furnace installation and repair
- Railroads
- Hydraulic fracturing for gas
- and oil

SCOPE OF COVERAGE

The standard applies to:

All occupational exposures to respirable crystalline silica in construction work where employee exposure is at or above $25\mu\text{g}/\text{m}^3$ as an 8-hour TWA.

The PEL is $50\mu\text{g}/\text{m}^3$ as an 8-hour TWA.



The standard does not apply

- Where employee exposure will remain below $25\mu\text{g}/\text{m}^3$ as an 8-hour TWA under any foreseeable conditions.
- The phrase “any foreseeable conditions” refers to situations that can reasonably be anticipated.
- OSHA considers failure of engineering controls to be a situation that is reasonably foreseeable.

Note: The definition of foreseeable conditions is an important one to remember for abrasive blasting and painting firms.

Roadmap for Compliance



Determine if the silica standard applies to your employees. If it does not apply, you are done.



If the silica standard does apply to your operation/s, you have two potential options. Comply with Table 1 (specified control methods) or The Alternative methods of compliance for all activities not listed in Table 1.



[Abrasive blasting](#) is not included in Table 1. You must comply with the Alternate Method of Compliance--the traditional OSHA approach to complying with a chemical hazard.

Fully and Properly Implemented



According to OSHA, fully and properly implemented means that controls are in place, are properly operated and maintained, and employees understand how to use them.



The presence of large amounts of visible dust generally indicates that controls are not fully and properly implemented.



As part of full and proper implementation, many Table 1 tasks require the employer to operate and maintain tools according to manufacturers' instructions for minimizing dust emissions.

Table 1 Tasks

- Stationary masonry saws;
- Handheld power saws;
- Walk-behind saws;
- Drivable saws;
- Rig-mounted core saws or drills;
- Handheld and stand-mounted drills (including impact and rotary hammer drills);
- Dowel drilling rigs;
- Vehicle-mounted drilling rigs;
- Jackhammers and handheld powered chipping tools;
- Handheld grinders;
- Walk-behind milling machines and floor grinders;
- Drivable milling machines;
- Crushing machines; and
- Heavy equipment and utility vehicles when used to abrade or fracture silica-containing materials (such as hoe-ramming or rock ripping) or during demolition activities, and for tasks such as grading and excavating.

Roadmap Summary - Table 1

Requirement	If Fully and Properly Implemented
PEL	No
Exposure Assessment	No
Methods of Compliance	No
Respiratory Protection	Yes, if respirator use is required by Table 1
Housekeeping	Yes
Written Exposure Control Plan	Yes
Medical Surveillance	Yes, for employees who must wear a respirator under the silica standard for 30 days or more days a year
Communications of Hazards	Yes
Record Keeping	Yes, for any employees who are getting medical examinations

Alternate Exposure Control Method

Requirement	If Following Alternative Exposure Controls
PEL	Yes
Exposure Assessment	Yes, when exposures are reasonably expected to be above the action level.
Methods of Compliance	Yes
Respiratory Protection	Yes, if respirator use is required to reduce exposures to the PEL
Housekeeping	Yes
Written Exposure Control Plan	Yes
Medical Surveillance	Yes, for employees who must wear a respirator under the silica standard for 30 days or more days a year
Communications of Hazards	Yes
Record Keeping	Yes

WHAT CAN WE DO FOR YOU?

Contact our experts today. Protect your company.
Protect your people.



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Request a silica exposure assessment at kgces.com/silica