

HAZARD ALERT

CPWR
THE CENTER FOR CONSTRUCTION
RESEARCH AND TRAINING

PROTECT WORKERS FROM SILICA DUST...

Working in an Enclosed Cab



The risk

If you work in construction or surface mining and operate mobile equipment you can be exposed to dangerous levels of silica dust.

You are at risk when silica dust gets into the air you breathe inside the cab.

Breathing it can be deadly.

Why it's deadly

Respirable crystalline silica dust particles are very small. You can be in danger even if you can't see the dust. When you breathe dust that contains silica, the tiny particles damage your lungs.

You can get **silicosis** after just a few weeks of very high exposure. Even breathing small amounts over time can cause silicosis, lung cancer, or COPD. By the time it gets hard to breathe you are already sick. There is no cure for silicosis.

Employers must follow government exposure limits:*

- ▶ **The Occupational Safety and Health Administration (OSHA)** limits construction workers' silica exposure to 50 micrograms per cubic meter (50 $\mu\text{g}/\text{m}^3$ - the permissible exposure limit or PEL).
- ▶ **The Mine Safety and Health Administration (MSHA)** limits mine workers' exposure to coal dust, which contains silica, to 1,500 micrograms per cubic meter (1,500 $\mu\text{g}/\text{m}^3$).

*Sources: OSHA <https://tinyurl.com/OSHA-1926-1153>;
MSHA <https://tinyurl.com/MSHA-Silica>

Protecting workers

An enclosed cab can protect the operator if it:

- ▶ Is kept as free as possible from dust, and has a properly working **air filtration system** that has a filter with an efficiency rating of 95% or higher (e.g., MERV-16). A higher rating means less dust can get through the filter.
- ▶ Is **positively pressurized** through the continuous delivery of fresh air. The pressure gauge in the cab should read between 0.05 - 0.25 inches of water (in.w.g. or in.H₂O)
- ▶ Has a **heating and cooling system** with air circulation vents that create a one-directional air flow, with discharge vents above the equipment operator and pickup vents low in the cab.
- ▶ Has a **communication system** that lets the operator talk to other workers without opening the window or door.
- ▶ Is regularly **cleaned and properly maintained**, including closing mechanisms, gaskets, and door and other seals.

For workers and bystanders outside the enclosed cab, water and/or dust suppressants can reduce exposure to silica and other dust.

Before work begins...

1 Air filtration system

Inspect the system's filters for damage or airflow bypass.

Notify your supervisor if the filter needs to be cleaned or replaced.



Photo courtesy of A. Cecala, NIOSH Mining Division

2 Cab structure

Inspect the cab daily for holes, gaps, and cracks around doors, windows, joints, power line entries, and controls. Use silicone caulk or rubber gaskets to repair and seal these areas. Notify your supervisor if a door gasket or window seal needs to be replaced.



Photo courtesy of A. Cecala, NIOSH Mining Division

3 Air pressure

Check the pressure gauge daily to ensure it works.

Monitor the pressure throughout the work shift to make sure positive air pressure is maintained in the cab and dusty air is kept out.



Photo courtesy of A. Cecala, NIOSH Mining Division

To learn more about silica exposure and working safely in an enclosed cab, visit:

- ▶ Work Safely with Silica - www.silica-safe.org
- ▶ NIOSH Mining Resources - <https://tinyurl.com/NIOSH-Mining>
- ▶ OSHA Silica in Construction Resources - <https://tinyurl.com/OSHA-Silica>

If you think you are in danger:

**Contact your supervisor.
Contact your union.**

**Call OSHA
1-800-321-OSHA**

Find out more about construction hazards.

To receive copies of this Hazard Alert and cards on other topics

**call 301-578-8500 or
email cpwr-r2p@cpwr.com**

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