

Safety Bugle



Today's Topic: Exposure to Dust

Dust Exposure

Dust is a common fact of life, but too much dust can be harmful to your health. Dust can be harmful by depositing in your lungs, and after long periods of time these deposits do not allow your lungs to work as well, making it harder to breathe and leading to disease.

Crystalline Silica

Crystalline silica is a basic component of soil, sand, granite, and most other types of rock, and it is also used as an abrasive blasting agent.



People who work with silica should be aware that exposure to silica is more hazardous than other types of dust. Silica dust is much smaller particles that can reach the deepest parts of the lungs.

It only takes a very small amount of the very fine respirable silica dust to create a health hazard. Recognizing that very small, respirable silica particles are hazardous, OSHA regulation 29 CFR 1926.55(a) requires construction employers to keep worker exposures at or below a Permissible Exposure Level (PEL) of 0.1 mg/m³. The National Institute for Occupational Safety and Health has a lower Recommended Exposure Level of 0.05 mg/m³.

Silicosis

Silicosis is caused by exposure to respirable crystalline silica dust. Lung tissue reacts to the trapped silica particles within the deepest parts of the lungs developing fibrosis, a scarring that makes breathing difficult and increases the risk of disease.

Effects of Silicosis

- **Lung Cancer** – Silica is classified as a human lung carcinogen.
- **Bronchitis**
- **Chronic Obstructive Pulmonary Disorder (COPD).**
- **Tuberculosis** – Silicosis makes an individual more susceptible to TB.
- **Scleroderma** – A disease affecting skin, blood vessels, joints and skeletal muscles.

Controlling Dust Exposure

Use all available Engineering controls such as:

- Replacing silica based products for blasting and other uses with a material that does not contain crystalline silica (substitution).
- Using local exhaust ventilation
- Containment methods such as:
 - Blast-cleaning machines.
 - Blast cabinets
 - Wet methods including sawing or drilling of silica containing materials.

As well as using all Administrative controls such as:

- Limiting workers' exposure time.
- Requiring works to shower and change into clean clothes before leaving the worksite.

When Engineering and Administrative Controls are Not Enough

When these controls are not enough to reduce silica dust exposure levels, your employer **MUST** provide you with a properly fitted and selected respirator.

How to Protect Yourself

It is the employer's responsibility by law to provide a safe workplace. However, it is a worker's responsibility to use the equipment provided, participate in educational programs on silica, and follow his or her employer's safety and health instructions. Including:

- Being informed of the health effects of breathing silica dust and the tasks that generate this dust on the job.
- Reducing exposure by avoiding working in dust whenever possible, using controls provided, and wearing a respirator when needed.
- Taking advantage of health or lung screening programs offered.
- Using good personal hygiene at work:
 - Do not eat, drink, or use tobacco products in dusty areas.
 - Wash hands and face before eating, drinking, or smoking outside dusty areas.
 - Change into disposable or washable work clothes at the worksite.
 - Shower (if possible) and change into clean clothes before leaving the worksite to prevent contamination of other work areas, cars, and homes.
 - Park cars where they will not be contaminated with silica.