



Dangers of (Crystalline) Silica Dust Safety Talk

There has been much discussion about silica dust in the past few years. OSHA has issued a regulation to help protect workers from overexposure to this dust. It has been largely unregulated in the past and because of this, many workers have been faced with overexposure to silica dust. The CDC reports that an estimated 1.7 million U.S. workers are exposed to silica dust on the job. **OSHA issued its final rule for silica dust** on June 23, 2016, but employers have between a year and five years to be fully compliant with the standard depending on the industry. The construction industry has to be fully compliant with the standard in September of 2017, general industry/ maritime has until June of 2018, and hydraulic fracturing has until June of 2018 except for engineering control which has a compliance date of June 2021.

What is Silica Dust and Where is it Found? (source: [OSHA.gov](https://www.osha.gov))

Crystalline silica is an important industrial material found abundantly in the earth's crust. Quartz, the most common form of silica, is a component of sand, stone, rock, concrete, brick, block, and mortar. Materials containing quartz are found in a wide variety of workplaces. Common industries and operation where crystalline silica is found include: construction, glass products, concrete products, foundries, cut stone products, railroad track maintenance, abrasive blasting, and many more. Occupational exposure to respirable crystalline silica occurs when cutting, sawing, drilling, and crushing of concrete, brick, ceramic tiles, rock, and stone products.

Health Effects and Illnesses Caused by Silica Dust

Silica dust is hazardous when very small respirable particles are inhaled. These respirable dust particles can penetrate deep into the lungs and cause disabling and sometimes fatal lung diseases, including silicosis and lung cancer, as well as kidney disease. Crystalline silica is I of 119 agents listed as "carcinogenic to humans" by the **International Agency of Research on Cancer** also known as IARC.

Best Practices in Reducing Exposure to Silica Dust

- **Eliminate** the source of the dust whether that is through engineering controls or a change in work processes.
- Use collection or vacuum systems to collect dust at the point of operation to avoid suspended the dust in the air.
- Use wet methods when cutting or breaking any concrete or similar materials.
- Use water as a means of suppression for the dust on roadways or in work areas.
- Stay out of areas where silica dust levels are high as well as avoiding being downwind from these areas.
- Use proper respirators when engineering controls are not enough to protect you.



Summary

It is important to understand the hazards that silica dust creates for the workers who are exposed to it. While the regulation for silica dust is new, the hazards and health consequences have been known for decades. Use engineering controls and other effective safeguards to reduce the amount of this dust in the air to reduce overexposure.

Note: Much of this talk was taken straight from OSHA. Sources are listed in talk.