

Q & A

Silica - the Problem that Won't Go Away.

Is Silicosis Serious?

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SILICA - THE PROBLEM THAT WON'T GO AWAY.

What is silica? Silica makes up 59% of rocks and soil. Because of its widespread occurrence, all mining, drilling and tunneling will cause exposure to silica. Silica is one of the least expensive abrasive blasting material so despite its hazards is still widely used.

How tragic that a substance that is so non-toxic in its whole form is so toxic when used as an abrasive blasting agent. At least since the 1930's, silica has been known to cause illness among abrasive blasting workers. It is also a health hazard for miners, foundry workers, construction workers, stone cutters, masons and toilet bowl/sink manufacturers

IS SILICOSIS SERIOUS?

Yes. Silicosis occurs in many stages of development. There are several types of silicosis. Refer to Chapter 2.

In the worst cases, silicosis can cause serious disability, secondary disease or death. Cases like these are not uncommon. Less serious cases can also have a heavy impact on those who are affected.

The family and children of abrasive blasters are also at risk of being exposed to silica dusts carried home on their parents' work clothes or shoes. Lasting health effects can result from these exposures.

There is no treatment for people with silicosis. Secondary infections such as tuberculosis or bronchitis can be treated but silicosis cannot. For that reason, protection and prevention are absolutely essential.

IS SILICOSIS STILL A PROBLEM IN THE 2000's?

Yes. Michigan's surveillance efforts have confirmed 1048 cases of silicosis from 1988-2016. Each year approximately 20 new cases are confirmed in Michigan. Using data from the Michigan silicosis surveillance system and the number of deaths that occur nationally from silicosis collected by the National Center for Health Statistics, we estimate that there

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are approximately 3,600 to 7,300 newly diagnosed cases of silicosis occurring each year in the United States.

The individuals identified with silicosis generally have severe disease. Twenty-five percent have progressive massive fibrosis (PMF) and another 34% have advanced simple silicosis. Only about a third of all patients have normal breathing tests. Nineteen percent had been told they had tuberculosis (includes either clinical disease or a positive skin test). Individuals with silicosis in Michigan have an increase of over 300% in the likelihood of dying from non-malignant respiratory disease, both restrictive and obstructive, and an 80% increase in the likelihood of dying from lung cancer

Ninety-eight percent of the cases are men. Many people who are exposed to respirable silica dust at work never get medical monitoring, so the official count is just a fraction of the true number of those with silicosis.

Despite the risk, most abrasive workers have not received adequate safety training. Neither have any of the workers, who assist the abrasive worker. The workplace typically lacks the engineering controls like dust collection systems, ventilation and the respiratory protection that are needed to handle silica dust safely. Most times small shops don't have showers where workers can clean up before going home.

HOW CAN SILICOSIS BE PREVENTED?

Every single case of silicosis can be prevented. This is the general idea: silica has no useful role in the human body, so protect yourself from exposures and keep it out.

- ➔ Non-silica abrasive blasting medias should be used.
- ➔ Eliminate or cut down on the amount of silica dusts in your shop.
- ➔ Give workers the knowledge, tools, and training to protect themselves.

Companies should eliminate the risk by substituting abrasive medias. For those that can't, you should rely on protective measures. Use special equipment for dust collection, ventilation and respiratory protection. Provide frequent safety training sessions for your workers. As long as silica sand is used to blast, progress must be achieved by changes made in individual companies like yours. Your shop and your coworkers will be required to make a commitment to the prevention of silicosis.

WHY SHOULD YOUR COMPANY WORRY ABOUT SILICOSIS?

Silicosis statistics leave no doubt that there is a danger to the health of abrasive blasting workers if the worker blasts with sand, without using appropriate engineering controls, respiratory protection and other personal protective equipment. What will happen if any employee develops silicosis?

What will happen when a MIOSHA inspector shows up on your doorstep? Your shop

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should consider this: If a MIOSHA inspector finds serious silica dust problems in your shop, you could be made to pay substantial fines, and you could be required to comply with all of the MIOSHA standards. If silica dusts from your company make anyone sick, you could face increased workers' compensation costs. If anyone in your community gets sick, you could face enormous lawsuits. You should also think about yourself and your family. All of these problems will be far worse if you wait for them to happen, rather than taking action to correct them now.

As your company plans for the future, consider all the benefits and the risks of blasting with silica. Fixing potential silica dust problems now could make the difference between the company's success and failure.

WHAT IS AIR SAMPLING?

Air sampling is a way of measuring how much silica dust is in the air that workers breathe. This is important because breathing is how silica gets into the lungs. When air sampling is performed, samples of workplace air from your breathing zone are collected by special personal air sampling pumps. Silica dusts are trapped on small, ultra-efficient filters and the filters are sent to a lab to be analyzed for your exposure. The sample collection equipment is light and portable. Several workers will wear sampling pumps throughout the sampling session. Air sampling should be performed on days when production is at 100%.

Air sampling should be done under the supervision of a professional - an industrial hygienist is qualified and trained in workplace air sampling. A plan should be developed with the industrial hygienist's assistance to outline the number of air samples needed, selected workers and areas to sample, who will wear the sampling equipment and the days on which the sampling will be performed. The industrial hygienist will be responsible for assuring that high-quality, reliable, analytical results are obtained and that proper equipment and methods are used.

WHAT DOES MEDICAL MONITORING INCLUDE?

MIOSHA requires employers have a medical surveillance program if the worker meets the silica standard's requirements for exposure to respirable crystalline silica. See Chapter 9. The program should be set up and run by a medical doctor, preferably an occupational medical expert, or occupational clinic. The services provided would include a medical and occupational history, medical evaluation, pulmonary function test, chest X-ray and communication with the company and the employee.