



Silicosis Fact Sheet for Construction Workers

NIOSH

National Institute for Occupational Safety and Health
Delivering on the Nation's Promise: Safety and Health at Work for
All People...through Prevention

Important Information for Construction Workers
on
Deadly But Preventable Dust Exposure

Silicosis has taken a serious toll in the United States, attacking workers in many settings. Here is a real-life story...

A West Virginia driller will not see his 10 year old daughter grow up. He will not be there when she gets married. He will not be there when she starts a family of her own. During the fall of 1988 a driller in his late 40's had chest pain. So he went to a hospital in Morgantown West Virginia. The doctors told him he had silicosis (lung damage). He continued to work and support his family as many workers do. He died from silicosis during the spring of 1994 after 18 years of drilling. After his death his lungs were examined. His lungs were hard because of all the dust in them. It was difficult to cut them even with a scalpel.

Thousands of People are exposed to crystalline silica dust at work every day.

Early Deaths From Dust - Don't Let It Happen To You!

- * 42 year old construction worker in Pennsylvania
- * 37 year old construction worker in Ohio
- * 49 year old construction laborer in Oklahoma
- * 41 year old construction worker in Indiana
- * 44 year old construction laborer in North Carolina
- * 39 year old construction painter in Ohio

What Is Silicosis?

Silicosis is lung damage caused by breathing dust containing extremely fine particles of crystalline silica. Crystalline silica is found in materials such as concrete, masonry and rock. When these materials are made into a fine dust and suspended in the air, breathing in these fine particles can produce lung damage.⁽¹⁾ Silicosis can lead to heart failure and increase the risk of other diseases such as TB (tuberculosis).^(2, 3, 4)

Symptoms of Silicosis:

- * Initially there may be no symptoms.
- * Later there may be difficulty in breathing and cough may be present.
- * Infectious complications may cause fever, weight loss, and night sweats.

See a physician if you experience these symptoms and suspect that you are exposed to crystalline silica.

How Do Construction Workers Get Exposed?

Most crystalline silica comes in the form of quartz. Common sand can be as much as 100%

quartz. Concrete and masonry products contain quartz in the form of sand. Therefore, there are many ways to be exposed at construction sites.

Some Activities In Which Quartz Dust May Be Present In The Air Include:

- * Abrasive blasting using silica sand as the abrasive.
- * Abrasive blasting of concrete.
- * Chipping, hammering, and drilling rock.
- * Crushing, loading, hauling, and dumping rock.
- * Chipping, hammering, drilling, sawing, and grinding concrete or masonry.
- * Demolition of concrete and masonry structures.
- * Dry sweeping or pressurized air blowing of concrete or sand dust.

How Is Silicosis Prevented?

The key to silicosis prevention is to prevent dust from being in the air. The Occupational Safety and Health Administration (OSHA) requires administrative or engineering controls be used whenever possible. A simple control may work. Example: A water hose to wet dust down at the point of generation. Here are some steps you can take to protect yourself:

- **Always use the dust control system** and keep it in good maintenance.
- **When sawing concrete or masonry use saws that provide water to the blade.**
- **During rock drilling use water through the drill stem** to reduce the amount of dust in the air.
- Use dust collection systems which are available for many types of dust generating equipment.
- Use local exhaust ventilation to prevent dust from being released into the air.
- **Minimize exposures to nearby workers** by using good work practices.
- **Use abrasives containing less than 1% crystalline silica during abrasive blasting** to prevent harmful quartz dust from being released in the air.
- **Measure dust levels in the air.**
- **Respirators should only be used after dust controls are in place.** Respirators should not be the primary method of protection. If controls cannot keep dust levels below the NIOSH Recommended Exposure Level (REL) then respirators should be used. Select respirators that provide enough protection. **Keeping respirators fit for use requires continual maintenance.**

When respirators are used OSHA requires employers to establish a comprehensive respiratory protection program. Respiratory protection programs are outlined in the NIOSH Guide to Industrial Respiratory Protection.⁽⁵⁾

All workers breathing crystalline silica dust should have a medical examination. Medical Examinations:

- Chest X-ray (classified according to the 1980 International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses⁽⁶⁾).
- Pulmonary function test.
- Annual evaluation for TB (tuberculosis)⁽⁷⁾.

Want More Information?

Two NIOSH Silicosis Alerts available:

1. Preventing Silicosis and Deaths From Sandblasting(8);
2. Preventing Silicosis and Deaths in Rock Drillers.(9)

For free copies call NIOSH at 1-800-35-NIOSH.

Your Comments

The National Institute for Occupational Safety and Health (NIOSH) requests assistance in controlling exposures of construction workers to respirable crystalline silica. The need is urgent to inform construction workers, coworkers, and construction managers about the respiratory hazards associated with respirable crystalline silica.

Your comments on how best to inform construction workers about this preventable disease are welcomed. Please send your comments to: Ken Linch, Industrial Hygienist, NIOSH, Division of Respiratory Disease Studies, 1095 Willowdale Road, Morgantown, West Virginia 26505-2888.

Acknowledgments

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