



Weekly Safety Meeting

Your Safety Is Our Business®

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Hazards of Silica

Silica exposure remains a serious threat to nearly 2 million U.S. workers, including more than 100,000 workers in high risk jobs such as abrasive blasting, foundry work, stonecutting, rock drilling, quarry work, and tunnelling.

Crystalline silica is a basic component of soil, sand, granite, and many other minerals. Quartz is the most common form of crystalline silica. The dust may become respirable size particles when workers chip, cut, drill, or grind objects that contain crystalline silica.

Crystalline silica has been classified as a human lung carcinogen. Additionally, breathing crystalline silica dust can cause silicosis, which in severe cases can be disabling, or even fatal.

The respirable silica dust enters the lungs and causes the formation of scar tissues, thus reducing the lungs' ability to take in oxygen. There is no cure for silicosis. Since silicosis affects lung function, it makes one more susceptible to lung infections like tuberculosis. In addition, smoking causes lung damage and adds to the damage caused by breathing silica dust.

Chronic/classic silicosis, the most common form of the disease, occurs after 15-20 years of moderate to low exposures to respirable crystalline silica. Symptoms associated with chronic silicosis may or may not be obvious: therefore, workers need to have a chest x-ray to determine if there is lung damage. As the disease progresses, the worker may experience shortness of breath upon exercising and have clinical signs of poor oxygen/carbon dioxide exchange. In the later stages, the worker may experience fatigue, extreme shortness of breath, chest pain, or respiratory failure.

There is no known cure for silicosis. If you are diagnosed with this disease it is likely you will eventually die from it. Working safely and preventing Silica dust from entering your lungs is the only way to be sure you won't develop this awful disease.

Silica:

- Silica is the basic component of sand and rock. The best-known and most abundant type of crystalline silica is quartz.
- Some common silica-containing materials include:
 - Concrete, concrete block, cement, and mortar;
 - Masonry and tiles;
 - Brick, refractory brick;
 - Composite products such as Hardiplank (Fiber cement siding);
 - Granite, sand, fill dirt, top soil;
 - Asphalt containing rock or stone; and
 - Abrasives used for blasting.



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Silica Exposure:

- If you do one of the following activities, you are at risk of breathing silica dust:
- Chipping, sawing, grinding, hammering, and drilling of rock, concrete, or masonry;
- Crushing, loading, hauling, and dumping of rock;
- Sawing, hammering, drilling, grinding, and chipping of concrete or masonry structures;
- Demolition of concrete or masonry structures;
- Power cutting or dressing stone;
- Facade renovation, including tuckpoint work;
- Abrasive blasting and hydro-blasting of concrete;
- Clean-up activities such as dry sweeping or pressurized air blowing of concrete or sand dust; or
- Tunneling, excavation, and earth moving of soils with high silica content.

Silica Controls:

- Replace crystalline silica materials with safer substitutes.
- Use engineering controls, such as local exhaust ventilation and blasting cabinets.
- Use protective equipment or other protective measures to reduce exposures below PEL.
- Use work practices controls, such as water sprays, when cutting bricks and blocks.
- Wear only NIOSH certified respirators, if respiratory protection is required.
- Do not alter the respirator.
- Wear only a Type CE abrasive-blast supplied-air respirator for abrasive blasting.
- Shower if facilities are available and vacuum the dust from your clothes or change into clean clothing before leaving the worksite.
- Participate in training, exposure monitoring, and health screening and surveillance programs to monitor any adverse health effects caused by crystalline silica exposures.
- Do not eat, drink, apply cosmetics or smoke in areas where crystalline silica dust is present.

Proper housekeeping measures:

- Minimizing your dry sweeping of the work area;
- Using vacuum cleaners to collect dust;
- Wetting down the area prior to cleanup;
- Never using an air supply to blow dust off of work clothing. (Air pressure causes silica dust to become airborne.); and
- Removing dust-contaminated clothing at the worksite to minimize transportation and relocation of the dust.

Remember: If it's silica...it's not just dust!!



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Safety Meeting Sign-In Sheet

Supervisor:	Subject:
Location:	Date:
Conducted By:	Trainer Signature:

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests

