



SAFETY BULLETIN

Safety Bulletin # 14-1

SILICA DUST

Silica is the basic component of sand and rock. Quartz is the best known and most abundant type of silica. Common construction related silica-containing materials are:

- Concrete, concrete block, cement and mortar
- Masonry, tiles and brick
- Granite, sand, fill dirt and top soil

Silica is so common that any activity that creates dust can expose workers to airborne silica.

SILICOSIS

Silicosis is a disease caused by the prolonged breathing of crystalline silica dust. Fine particles deposited in the lungs cause thickening and scarring of lung tissue. Crystalline silica has also been linked to lung cancer.

A worker may develop any of the following three types of silicosis, depending on the concentration of silica dust and the duration of exposure.

- **Chronic Silicosis**- develops after 10 or more years of exposure at relatively low concentrations.
- **Accelerated Silicosis**- develops 5-10 years after initial exposure at high concentrations.
- **Acute Silicosis**- symptoms develop anywhere from a few weeks to 4-5 years after exposure to very high concentrations.

Initially, workers with silicosis may have no symptoms. However, as the disease progresses a worker may experience:

- Shortness of breath
- Severe cough
- Weakness

These symptoms can worsen over time and lead to death.

EXPOSURE TO SILICA DUST

Any of the following activities put you at risk of breathing silica dust.

- Chipping, sawing, grinding, hammering or drilling of rock, concrete or masonry structures.
- Building demolition.
- Power cutting or dressing stone.
- Façade renovation.
- Abrasive or hydro cutting of concrete.
- Sweeping or air blowing of concrete or sand dust.
- Excavation or earth moving of soils with high silica content.

HOW EMPLOYERS CAN PROTECT WORKERS

- Provide engineering controls – Use local exhaust ventilation, portable HEPA filter system or water spray systems to reduce dust levels. Use barriers to restrict access by unprotected workers.
- Provide appropriate PPE such as respirators (minimum 3M 6300 half mask with R100 filter or equivalent)
- Train workers on the dangers of silica exposure, and how to use dust controls and PPE.
- Develop and implement an exposure control plan for silica. An effective plan must include purpose and responsibilities, risk assessment controls, education, training, written safe work practices, health monitoring and documentation.

HOW WORKERS CAN PROTECT THEMSELVES

- Learn about the control methods that can protect you.
- Ask your supervisor how you will be protected when performing dusty work.
- Use a sweeping compound such as Dust Bain to reduce the amount of dust generated.
- Follow safe work practices and use respiratory protection.

KRAWFORD ACTIVITIES THAT POSE A RISK

- Drilling, jackhammering and cutting of concrete in an enclosed space where dust is not naturally dissipated.
- Grinding of concrete.
- Sweeping as result of any of the above.

Silica is listed in Schedule 1, Table 1 at the back of the OH&S Handi-guide. Other items listed in that table include asbestos, benzene, hydrogen sulphide and vinyl chloride. It should be taken very seriously, but it is easily mitigated using proper controls and PPE.





