

Silicosis is caused by the inhalation of respirable crystal crystalline silica dust which can lead to lung inflammation and fibrosis. This lung disease is commonly fatal and given that there are no existing treatments outside of a lung transplant, silicosis can also greatly increase the chances of pulmonary tuberculosis. The positive here is that the disease is preventable.

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TAKING SIMPLE STEPS TO PREVENT SILICOSIS

According to the *Work Health and Safety Roadmap for NSW 2022*, the state is targeting a 30 per cent reduction in serious injuries and illnesses by 2022. One part of this reduction comprises the exposure to hazardous chemicals and materials. Following a thorough investigation and filtering of various criteria, crystalline silica ranked second highest.

Crystalline silica is found in almost every type of natural rock, clay, sand and gravel in Australia. In man-made and artificial stone as well as masonry products, such as kitchen benchtops, it can be more potent. Silicosis often develops over a period, sometimes taking up to 30 years for people to show symptoms.

Crystalline silica dust particles are tiny enough to penetrate deep into the lung. The main form of crystalline silica is quartz, with sandstone averaging 67 per cent quartz.

WHY SHOULD BUSINESSES CARE ABOUT SILICOSIS?

According to Australian standards, employers have a duty of care for their staff. It is their responsibility to ensure they are not sick or contaminated from their workplace.

When it comes to exposure controls and personal protection, there are some standards that have been set out by the

Australian Safety and Compensation Committee (ASCC). The occupational exposure limit (OEL) for respirable crystalline silica using the time weighted average (TWA) are as follows: respirable dust of 3mg/m³, respirable crystalline silica of 0.1mg/m³ and inhalable dust of 10 mg/m³.

Silicosis can be categorised into three core types:

- Classic silicosis, which is usually observed after 15 years or more after first exposure.
- Accelerated silicosis, appearing in workers after high exposure over a shorter period (5-10 years).
- Acute silicosis, which can be observed in as little as two years after exposure to silica at very high concentration.

PREVENTATIVE METHODS

Cutting the stone wet

Given that silicosis is driven by dust particles, a key way to reduce the inhalation ingestion and body contact of this dust is to reduce the amount of airborne dust produced when cutting any type of stone products. One way to prevent this is by applying a water suppression system to ensure the stone is cut wet in order to reduce dust generation.

When cutting a stone wet, water is sprayed on to the blade as the stone is cut, which keeps the dust at a minimum. The dust and water form a slurry, preventing airborne dust coming off the stone. Ordinarily, if for example a tile is cut with a grinder, a big cloud of dust would form which would create potential health risks.

Cutting in the right environment

It is critical when crystalline silica is being emitted that the environment is set up to achieve minimal dust flow. It is ideal when cutting, to cordon off an area to ensure there is a specific cutting room with an extraction unit. Within this room it is preferable to use a table saw that cuts wet and circulates the water from the deck of the table saw through the filter feed.

As a whole, it is ideal to use local exhaust ventilation systems to remove dust at the source. Ensure this ventilation is correctly placed and operates at effective flow rates. Use dust removal systems on tools to reduce dust exposure for mobile workers.

Wear preventative gear

Wearing the right respiratory preventative gear is extremely vital to avoid inhalation of silica dust. It is imperative that the right mask, P2, with pre-filters and normal filters are used by workers. To ensure longevity with these masks, they should be wiped down with antibacterial wipes, cleaned and stored in a plastic container after use, to make sure they are kept in good condition and not damaged. Ideally, pre-filters should be changed every week.

Providing suitable personal protective equipment (PPE), including a program to correctly fit, instruct on the use and

ensure regular maintenance of respiratory protective equipment (RPE) is crucial to ensure workers are protected.

Annual screening

As part of the general maintenance of looking after staff that work in a potentially dangerous environment with silicosis risk, it is ideal to send these workers to a medical centre at least once per year for an annual screening. This screening of the lungs can be specifically for silicosis. Workers should take a list of their work history to these appointments.

Monitoring of staff

The Australian Standard AS 4801 Occupational Health and Safety Management System places a big emphasis in ensuring that staff are looked after. From site walks and inspections, to documents onsite that talk about silicosis and preventative methods, it is important that this topic be top of mind with staff members. Make an emphasis of this topic in team meetings and be sure to provide staff warnings if they are avoiding preventative methods.

In conclusion, silicosis can be a fatal illness. Workers deserve a safe working environment and should be given any opportunity to stay healthy in their jobs. Be sure to make silicosis a part of the next team meeting.

Sources: Catalogue No. SW08705 SafeWork NSW 92-100 Donnison Street, Gosford NSW 2250; Hazardous Chemicals Requiring Health Monitoring, Safe Work Australia

