



WORKING WITH CRYSTALLINE SILICA MATERIALS IN THE CONSTRUCTION INDUSTRY

The ACT has specific silica safety rules that prohibit uncontrolled dry cutting of crystalline silica materials and mandate silica dust awareness training.

Working with crystalline silica materials

In the residential and commercial construction industry crystalline silica can be found in many different natural and manufactured forms, including stones, rocks, quartz, sand, gravel, and clay.

The crystalline silica content in materials can vary widely; sandstone can have up to 90% silica, granite typically contains 30% silica and concrete and aggregates will have a range of silica depending on its components.

The person conducting a business or undertaking (PCBU) must identify if crystalline silica is present at the workplace.

- If the crystalline silica content of products is unknown, review the product information sheet or safety data sheets (SDS), or contact your supplier.

When crystalline silica materials are cut, drilled, crushed or sanded, dust is released. The dust generates silica particles that are very small, known as respirable crystalline silica or silica dust. Silica dust is very small, and when it is airborne there is a risk of it being inhaled into the lungs.

Silica dust can cause significant health issues, including chronic bronchitis and emphysema, silicosis (irreversible scarring and stiffening of the lungs), lung cancer, kidney disease and auto-immune diseases such as scleroderma.

Managing the risks of silica dust

The *Work Health and Safety Regulation 2011* prohibits the uncontrolled dry cutting of crystalline silica materials to reduce the risk of silica dust being inhaled.

PCBUs must not direct or allow uncontrolled dry cutting of crystalline silica materials

The ban applies to things containing crystalline silica such as:

- engineered stone
- natural stone
- concrete and masonry
- cement and mortar, and
- bricks.

PCBUs must first consider eliminating the risk, for example by using materials that do not contain silica.

If elimination is not possible, a combination of control measures must be used to suppress the silica dust becoming airborne.

These are known as *silica control measures* and include a combination of:

- a continuous flow of water
- isolating the area where the silica containing material is being cut
- suppressing the dust using water or another wet method
- using on tool dust extraction (vacuum), and
- using local exhaust ventilation.



When applying the silica control measures, you must first consider whether you can modify the silica containing material using a continuous flow of water.

If this is not reasonably practicable, you must consider using a wet dust suppression method, such as a foam or spray of water and one other silica control measure.

If these are not reasonably practicable, you must consider on tool dust extraction plus one other silica control measure.

Where this combination is not reasonably practicable, you must consider a wet dust suppression method, or on tool dust extraction or whether a fully enclosed cabin can be used to separate the worker from the dust.

Only once all of these combinations have been considered, can you then use one silica control measure and respiratory protective equipment.

For more information on managing the risks of silica dust, see the [WorkSafe ACT Silica dust webpage](#).

Silica dust awareness training

PCBUs must provide the information, training, instruction and supervision that is necessary for workers to carry out their work safely.

All workers who work with crystalline silica materials and those who may be exposed to silica dust during their work must complete the nationally accredited Course in Crystalline Silica Exposure Prevention (10830NAT).

PCBUs must ensure Crystalline Silica Exposure Prevention training is completed by 1 July 2023

Air monitoring

Air monitoring is a method of measuring airborne hazardous chemicals, including dusts. It is not a control measure - it is used to check if worker's health is at risk; if the workplace exposure standard is being exceeded; and can be used to check the effectiveness of the control measures.

The mandatory maximum limit for silica dust in the ACT is an eight hour time weighted average (TWA) of 0.05 mg/m³. However, there is still a risk to worker health at this concentration. Therefore, exposure must be reduced as far as is reasonably practicable under this TWA.

Air monitoring should be undertaken at least every 12 months and when there is a change at the workplace, for example when a control measure changes. Air monitoring results must be readily available to workers and records of results kept for 30 years.

Health monitoring

Under the *Work Health and Safety Regulation 2011* PCBUs must provide health monitoring to workers who are continually working with silica containing materials. This is because there is a significant risk to their health due to the possible exposure to silica dust.

Health monitoring is carried out or supervised by a specialist doctor and may include:

- answering questions regarding previous occupational and medical history
- a physical examination or a spirometry (lung function test)
- clinical tests – urine or blood samples, and
- X-rays or HRCT.

For more information, see the [WorkSafe ACT Silica dust webpage](#).

More information

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