

Safety alert – Immediate action required to prevent exposure to silica for engineered stone benchtop workers

Purpose

This alert is to highlight the significant health risks caused by exposure to respirable crystalline silica (RCS) for workers in engineered stone benchtop manufacturing, finishing and installation industries.

Employers in these industries must immediately ensure they are complying with their duties under the *Work Health and Safety Act 2011* to have adequate dust controls in place. Failure to do so will result in enforcement action being taken.

Accumulated exposure to RCS can cause very serious and debilitating health effects, including silicosis. Note that RCS is smaller than dust which can be seen. It is only tiny dust particles which can get deep into the lungs, called the respirable dust, which is of concern.

Background

Recent compliance audits of engineered stone benchtop manufacturers conducted by Workplace Health and Safety Queensland have found multiple instances of workers being exposed to RCS.

As a result:

- five prohibition notices were issued for activities involving exposure to workers, dry cutting, guarding and plant maintenance issues
- twenty three improvement notices were issued for health monitoring, fit testing of respiratory protective equipment and inadequate dust control issues.

Health monitoring of these workers has returned multiple positive silicosis diagnoses.

All remaining engineered stone bench top fabricators in Queensland will be audited over the coming weeks to ensure adequate dust controls are in place and all other work health and safety obligations are being met.

Contributing factors

Fabricating, and installing natural and artificial stone bench tops can release high levels of RCS through cutting, grinding and polishing processes, particularly when dry cutting methods are used. Workers can also be exposed to RCS from poor cleaning practices, including dry brooming of dust, the use of compressed air, using non-H class HEPA filtered vacuum cleaners or by allowing the accumulation of dust within the workplace.

The risks are much greater when working with engineered stone as it contains up to 95 per cent crystalline silica while natural stone contains 5-50 per cent crystalline silica.



The workplace exposure standard for RCS will be exceeded if the amount of dust a worker breathes over a full shift contains more RCS than the amount shown here next to the five cent piece. However workers can still suffer adverse health effects from lower levels of exposure.

There are three types of silicosis:

- Acute silicosis is very rare and results from very short-term and very large amounts of exposure to silica (weeks or months).
- Accelerated silicosis results from short term large amounts of inadequately protected exposure to silica (5-10 years exposure). This was once rare, but is becoming more common in engineered stone workers and is the main reason for this alert.
- Chronic silicosis results from long term exposure to low levels of silica (10+ years).

Once the opacities in the lung exceed 1cm in size the disease is referred to as Progressive Massive Fibrosis (PMF).

Health testing has found a higher proportion of accelerated silicosis diagnoses.

Action required

Immediately

Persons conducting a business or undertaking must not allow uncontrolled dry cutting, grinding or polishing of artificial / engineered stone bench tops.

Engineering controls

- Water suppression of dust: For example direct water feeds on cutting or grinding equipment, and sheet wetting using consistent and adequate water flows over the stone slab.
- Use local exhaust ventilation (LEV): This includes only using cutting or grinding equipment when the LEV:
 - is part of the equipment design
 - is fitted to the individual equipment where dust is generated
 - includes an H class dust collector or vacuum
 - uses designed hoods or extraction machines.

Cleaning and maintenance of LEV fitted equipment must not expose workers to RCS.

- Wet dust slurry management: Wet spray must be controlled to prevent it becoming airborne. Spray can be controlled by using guards, plastic flaps and brush guarding. Wet waste, contaminated surfaces and contaminated garments must be effectively managed.
- Whole of workplace ventilation: For example extraction systems. However silica dust must not be allowed to transfer from where it is generated.
- Cleaning: Workplaces must have a dedicated regular cleaning regime. Low pressure water, wet wiping or H class vacuums must be used. Dry sweeping methods must not be used. The cleaning must include areas where silica dust can settle, for example storerooms and yards.

Isolation

- Isolate processes and workers where RCS is generated or handled.
- Provide physical barriers between different work processes and work areas.

Substitution

- Using materials with no or lower percentage crystalline silica content.
- Using routers and water jet cutters instead of powered hand tools.

Health monitoring

Persons conducting a business or undertaking must provide health monitoring to workers when there is significant risk to a worker's health because of exposure to a hazardous chemical such as respirable crystalline silica.

Recent air monitoring by Workplace Health and Safety Queensland has shown that health monitoring is required in all Queensland stone bench top fabrication workplaces.

Businesses must give Workplace Health and Safety Queensland a copy of the health monitoring report if:

- the report indicates the worker has contracted a disease, injury or illness (any reduction in lung function is considered an injury); or
- the report recommends you take remedial measures at the workplace.

Respiratory protective equipment (RPE)

Unless a workplace has undertaken air monitoring to demonstrate there is no residual risk from RCS, (which research shows is unlikely), an RPE program that complies with Australian Standard AS 1715 must be implemented.

The program must include:

- provision of suitable, comfortable RPE
- fit testing
- a maintenance and repair regime
- provision of information, training and guidance to workers.

RPE must be reasonably comfortable for the wearer. Consider providing powered air purifying respirators because of the physical demands of the task and potential for a hot and humid work environment.

Workers must wear the RPE whenever they are conducting dust generating processes.

Information for workers

Workers must be given information, training and instruction with regard to:

- the nature of the work carried out by the worker
- the nature of the risks associated with the work and exposure to RCS
- the control measures implemented at the workplace.

Consultation with workers

Stone bench top manufacturers must consult with their workers about minimising the risks associated with RCS and during the development of the health monitoring program including the selection of the registered medical practitioner for health monitoring.

Consultation must meet the standard of the *Work health and safety consultation, cooperation and coordination Code of Practice 2011*.

Further information

For more information on controlling the risk of exposure to respirable crystalline silica or to find out how to supply a health monitoring report call 1300 362 128 or visit [worksafe.qld.gov.au](https://www.worksafe.qld.gov.au).

If you or your workers are concerned about possible exposure to RCS, or to find out how to lodge a workers' compensation claim, call 1300 362 128 or visit [worksafe.qld.gov.au](https://www.worksafe.qld.gov.au).