



21 February 2023

IMPORTANT INFORMATION - CRYSTALLINE SILICA

Members would be aware that the issue of the dangers of silica have been recently highlighted in the media. The Association has been advising members for some time about the recommended control of silica and what the regulators also say.

Members are advised of the following information in relation to working with crystalline silica and products that contain crystalline silica.

SOURCES OF EXPOSURE

Materials and products containing crystalline silica include shale, sandstone, concrete, bricks and manufactured stone. Workers can come in contact with **crystalline silica** during excavation or tunnelling, through rock containing quartz such as shale or sandstone. A health hazard is created when the very fine particles of crystalline silica can be inhaled. The size fraction of airborne dust that can reach the lungs where air exchange takes place is known as the 'respirable fraction'.

Significant levels of airborne dust are most likely to occur when materials or products in the workplace are cut, sanded, drilled, or during any other activities which create fine dust. Exposures in workplaces can also occur through dry sweeping or using compressed air (rather than wet cleaning or using a Class M or H vacuum) and re-suspension of settled dust from clothing or fabric materials.

LABELLING AND SAFETY DATA SHEETS

Manufacturers and importers need to label their products if they contain 0.1% or more respirable crystalline and provide a current Safety Data Sheet (SDS) (**clauses 329, 330 and 335 WHS Regulation 2017**). Suppliers must ensure these products are correctly labelled when supplied to workplaces and provide an SDS (**clauses 338 and 339**).

A person conducting a business or undertaking (PCBU) must also obtain a copy of the SDS and make it readily accessible to workers involved in using, handling or storing hazardous materials at the workplace (**cl 344**).

HEALTH MONITORING

PCBU's are required to provide health monitoring to workers if there is a significant risk to the worker's health because of exposure to crystalline silica. (**cl 368**)

Crystalline silica is listed in **Schedule 14 of the WHS Regulation 2017** which outlines the health monitoring requirements.

In relation to health monitoring, PCBU (**clauses 369 to 378**) duties include:

- informing workers of the requirements for health monitoring
- using a registered medical practitioner with experience in health monitoring
- providing details to the medical practitioner
- obtaining a copy of the health monitoring report
- providing a copy of the health monitoring report to SafeWork NSW if the worker has developed a disease or injury and/or the report contains any recommendations on remedial measures at the workplace
- keeping records of health monitoring for 30 years.



Workers exposed to respirable crystalline silica at levels or a frequency not resulting in a significant risk to health, are not required to undergo health monitoring. Workers relying on personal protective equipment (PPE) such as respirators for controlling their exposures below the exposure standard must be included in health monitoring.

CONTROL MEASURES

Where risks to health and safety cannot be eliminated, the hierarchy of controls must be applied in accordance with the WHS Regulation to minimise risk.

For instance:

- apply water suppression systems to reduce dust generation
- use local exhaust ventilation systems to remove dust at the source
- ensure such ventilation is correctly placed and operates at effective flow rates
- use dust removal systems on tools to reduce dust exposure to mobile workers
- isolate areas of the workplace where dust is generated
- assess the level of personal exposure among workers performing high risk tasks
- ensure regular housekeeping in dusty work areas to prevent the accumulation of dust
- provide suitable PPE, including a program to correctly fit, instruct on use and ensure regular maintenance of respiratory protective equipment (RPE).

Clause 184 (O) of the WHS Regulation 2017 prohibits the uncontrolled cutting, polishing, grinding or drilling of manufactured stone products (also known as engineered or composite stone) in fabricating workshops or on site. At least one of the following controls to effectively reduce exposure to the dust must be in place:

- i. a water delivery system that supplies a continuous feed of water over the area being cut to suppress the generation of dust,
- ii. a prescribed extraction system (e.g., class M or H vacuum) that is attached to the tool used for the cutting to capture the dust produced by the cutting,
- iii. a local exhaust ventilation system that captures the dust produced by the cutting and transports the dust to a safe emission point or to a filter or scrubber.

Workers must also be **provided with** and **wear** half face piece respirators as a minimum, that comply with Australian Standard 1716 - Respiratory Protective Devices.

PCBU's must provide suitable information, training, instruction and supervision to workers using, storing and handling hazardous chemicals regarding the nature of the work, risks and the control measures implemented (**cl. 39 and 379**).

PCBU's with duties under the **WHS Regulation 2017** must review and revise control measures, as necessary, to maintain a work environment so far as reasonably practicable, that is without risk to health or safety (**cl 38**).

Other examples of control measures that can be applied to reducing the risks associated if you are working with silica or products that contain silica.



ELIMINATE OR SUBSTITUTE THE RISK

Remove the hazard completely, change the design, replace the hazard with products containing less crystalline silica.

For example, replace manufactured stone containing high levels of silica with materials containing no silica or much lower levels of silica.

ISOLATE THE HAZARD

Isolate workplace areas where dust is generated from other workers, enclose processes, or isolate the hazard from anyone exposed to it. For example, with barriers.

ENGINEERING CONTROLS

Use local exhaust ventilation systems to remove dust at the source and ensure such ventilation is correctly placed and operates at effective flow rates.

Use dust capture systems on tools to reduce dust exposure of mobile workers.

Ensure regular housekeeping in work areas to prevent the accumulation of dust and use H or M class vacuums for safe clean up.

DRILLING IN CONSTRUCTION

Construction materials such as sandstone, concrete and bricks can contain up to 90% silica dust. When drilling on these materials, you can generate and breathe in fine crystalline silica dust, which can cause serious illnesses such as silicosis and lung cancer. This helpful video provides advice on planning your job and using the correct safety controls to help protect workers and others from silica dust on site.

If you work with a drill or near those who do, [watch this video](#).

DEMOLITION AND EXCAVATION

Fine crystalline silica dust can be generated when carrying out demolition and excavation work, which can be harmful to breathe in, and can lead to serious and sometimes fatal illness. Exposure to silica dust when drilling materials can be minimised by using the right tools and protective equipment.

SILICA DUST – CONTROLLED CUTTING OF BRICKS AND CONCRETE USING ON-TOOL CAPTURE

On-tool dust capture is an effective way to eliminate and reduce exposure to silica dust. This video safety alert highlights how to use on-tool dust capture to ensure the safe cutting of materials such as bricks and concrete.

SILICA DUST – CONTROLLED CUTTING OF BRICKS AND CONCRETE USING WATER

Using water to control dust while cutting materials such as brick or concrete is a very effective way to eliminate and reduce exposure to silica dust. This video safety alert highlights [video here how to use water to control dust](#).



ADMINISTRATIVE CONTROLS

Use safe work procedures, minimise the time workers perform higher exposure tasks, alert workers and visitors to danger, and provide information, training and supervision.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Provide suitable PPE, including a program to correctly fit, instruct on use and ensure regular maintenance of respiratory protective equipment (RPE).

PERCENTAGE OF SILICA IN COMMON BUILDING PRODUCTS

Type	Amount of Silica (%)
Granite	25 to 40
Shale	22
Natural Sandstone	67
Engineered Stone	>90
Aggregates, mortar and concrete	Various

OTHER RESOURCES

<https://www.safework.nsw.gov.au/hazards-a-z/hazardous-chemical>

<https://www.safework.nsw.gov.au/resource-library/hazardous-chemicals/crystalline-silica/crystalline-silica-general-fact-sheet>

<https://infostore.saiglobal.com/en-au/Standards/AS-NZS-1715-2009-1092559/>

https://www.safework.nsw.gov.au/_data/assets/pdf_file/0017/50084/Preparation-of-safety-data-sheets-for-hazardous-chemicals-COP.pdf

<https://www.safeworkaustralia.gov.au/doc/workplace-exposure-standards-airborne-contaminants-2022>

Members with questions are encouraged to contact the Master Builders Safety department on safety@mbansw.asn.au or 02 8586 3555.