



# HEALTH & HYGIENE GUIDELINES

February 2020

Please note the Guidelines will soon be updated to reflect the Compliance code: Managing exposure to crystalline silica – engineered stone issued by Work Safe Victoria in February 2020



# Health & Hygiene Guidelines

## Fabricators Working Safely with Engineered Stone

### TABLE OF CONTENTS

1	Executive Summary	0
2	Introduction	0
3	Duties and Roles & Responsibilities	1
	3.1 Duties of a PCBU	1
	3.2 Duties of a Worker	1
	3.3 Roles and Responsibilities	1
4	Health and Safety Policy	1
5	RCS Hazard Identification	2
	5.1 Identifying RCS hazards	2
6	Assessing RCS Exposures Risks	2
	6.1 Assessing RCS exposure risks	2
7	Control of RCS Exposure Risks	2
	7.1 Controlling RCS risks	2
	7.2 RCS Engineering controls	3
	7.3 RCS Administrative Controls	3
	7.3.1 Respiratory Protective Equipment	3
	7.3.1.1 Respiratory Protective Equipment Training Requirements	4
	7.3.2 Personal Protective Equipment (PPE)	4
8	Evaluation and Verification	5
	8.1 Workplace personal exposure monitoring	5
	8.2 Health surveillance and assessment	5
	8.3 Verification of controls	6
	8.4 Incidents and Investigations	6
9	Records	7
Appendix A	Guidance on Health and Safety Policies	8
	Appendix A 1.1 Guidance on Health and Safety Policies	9
	Appendix A 1.2 Guidance on identifying RCS hazards	11
	Appendix A 1.3 Assessing RCS risk	12
	Appendix A 1.4 Example Safe Work Method Statement	19
	Appendix A 1.5 Engineering Controls	26
	Appendix A 1.6 Administrative Control Guidance	27
	Appendix A 1.7 Example personal exposure monitoring letter	28
	Appendix A 1.8 Pre-Employment Health Monitoring Template Letter	30
	Appendix A 1.9 Incident Investigation Form	32
	Appendix A 1.10 Training Records	34
Appendix B	Fabricator Audit Instrument	38
Addendum A	Queensland Code of Practice Requirements	47

## 1 Executive Summary

This Guideline has been developed by Greencap Pty Ltd (an expert in Occupational Hygiene and Work Health Safety), as an independent and unrelated third-party, on behalf of the Australian Engineered Stone Advisory Group (AESAG) to provide information and guidance to Organisations on compliance with certain work health and safety obligations relating to respirable crystalline silica (RCS) as set out in the Guideline.

This Guideline is not intended to be a complete description of all health and safety legislative requirements for an Organisation. It is highly recommended that all Organisations obtain professional advice in relation to complying with all of their health and safety obligations for each State or Territory.

## 2 Introduction

The purpose of this Health and Hygiene Guideline is to provide guidance on how to manage health risks associated with respirable crystalline silica (RCS), the very fine dust (respirable fraction – less than 10µm in diameter) which is generated by fabricating, processing, cutting, shaping and reworking of silica containing products such as Engineered Stone (ES).

RCS penetrates past the body's defences and enters the lower regions of the lungs causing scarring of the tissue leading to silicosis which can cause **death**.

Exposure to RCS can also lead to further conditions such as Renal Disease, Tuberculosis, Heart Disease, Autoimmune diseases, Chronic-Obstructive Pulmonary (Lung) Disease (COPD) – (e.g. Emphysema) and potentially progressing to **death**.

All Organisations are subject to state (or territory) health and safety legislation. Generally, Persons Conducting a Business or Undertaking (PCBU) must ensure, so far as is reasonably practicable, the health and safety of workers at the workplace. With regard to managing risks associated with RCS *State and Territory Legislation*:

- a. Requires the PCBU to provide a safe work environment for their workers;
- b. Requires the PCBU to reduce exposures to airborne contaminants which includes RCS to a concentration as low as is reasonably practicable (ALARP) and to control personal exposure to less than the published workplace exposure standards;
- c. Specifies a maximum workplace exposure standard for RCS of not greater than 0.05 mg/m<sup>3</sup> (8-hour Time Weighted Average (TWA)) (i.e. the upper limit of the TWA to which a worker may be exposed over an eight-hour work day over a five-day week); and
- d. Requires that for workers who have extended work days (extended shifts) or variations in working week schedules the exposure standard be adjusted accordingly.

This Guideline has been developed to provide the practicable and achievable minimum steps that should be taken by the PCBU to minimise the incidence and risks associated with RCS and suggests a risk management process of:

- a. Identification – the process of identifying those activities that pose a risk of exposure to RCS.
- b. Assessment - the process of evaluating the extent of the risk from RCS activities.
- c. Control –the process of addressing the risk by eliminating or minimising the extent of the risk.
- d. Evaluation – the process of checking the extent to which the control measures have been successful.
- e. Retaining records – provides examples of and retention periods for documentation relating to items a to d.

## 3 Duties and Roles & Responsibilities

### 3.1 Duties of a PCBU

A PCBU must ensure that all risks are eliminated in the workplace, or if that is not reasonably practicable, minimise risks so far as is reasonably practicable.

A PCBU has a duty to consult with Workers about Health and Safety matters, and may also have duties to consult, cooperate and coordinate with other duty holders.

State and Territory WHS/OHS Regulations include more specific requirements for Employers / PCBU's to manage the risks of chemicals, airborne contaminants (such as respirable crystalline silica) and plant, as well as other hazards associated to the workplace.

### 3.2 Duties of a Worker

Workers have a duty of care to take responsibility for their own health and safety, and to not undertake any activity that adversely affects the health and safety of other persons. Workers must comply with all reasonable instructions provided to them, as far as they are reasonably able, and must adhere to all reasonable Health and Safety policies or procedures that they have been notified of and appropriately trained in.

If respiratory protective equipment or personal protective equipment is provided by the Employer / PCBU, the Worker must so far as they are reasonably able, use or wear such equipment in accordance with the information, instruction and training provided.

### 3.3 Roles and Responsibilities

The following Roles and Responsibilities apply to the implementation of this guideline:

- a. An organisation must develop a Health and Safety Plan ("Plan") to achieve the elements of this guideline listed in Section 3 through 9.
- b. An organisation must identify who within the organisation has responsibility for implementing and maintaining the totality of the Plan, as well as those who are responsible for various parts of the Plan. Organisations should decide who is responsible for implementing and managing the elements of the guideline through consultation with the appropriate workers.
- c. The persons responsible for the totality of the Plan and implementing the parts of the Plan must be committed to achieving the requirements of the Plan as set out in Section 3 through 9.
- d. It is a responsibility of the Organisation to provide competent supervision of workers.

## 4 Health and Safety Policy

- a. The Organisation shall develop a Health and Safety Policy in consultation with workers (An example can be found in Appendix A 1.1). Effective consultation includes:
  - i. Talking about health and safety matters;
  - ii. Listening and raising concerns;
  - iii. Seeking and sharing views and information; and
  - iv. Considering what workers say before making decisions.
- b. The Health and Safety Policy must be displayed in relevant areas of the workplace and should make reference to health and safety including an acknowledgement of RCS.

## 5 RCS Hazard Identification

### 5.1 Identifying RCS hazards

- a. The Organisation shall demonstrate that they have identified areas and activities of their operations where RCS exists.
- b. Best practice requires consultation with workers to identify the RCS hazards.
- c. The identified RCS hazards should be recorded in a risk register.
- d. The process of identifying and recording RCS hazards shall be undertaken on an ongoing basis and particularly when new plant and equipment is introduced, or new processes are implemented, or processes are removed.

Appendix A 1.2 provides information on how an organisation can identify areas of the workplace that have a potential RCS hazard and Appendix A 1.3 gives an example of a risk register in which to record the identified RCS hazards.

## 6 Assessing RCS Exposures Risks

### 6.1 Assessing RCS exposure risks

- a. All organisations shall demonstrate that they have assessed the risk of exposure (usually as high, medium or low) to RCS for workers for all identified RCS generating tasks and activities (hazards refer section 5.1). Examples are given in 9Appendix A 1.2.
- b. Impacted parties e.g. workers, should be involved in the RCS risk assessment process. The organisation must consult with workers during the risk management process and demonstrate that consultation has occurred.
- c. RCS exposure risk assessments shall be documented in writing (as per the example in Appendix A 1.2 which can be used to document assessment outcomes).

## 7 Control of RCS Exposure Risks

### 7.1 Controlling RCS risks

Once an organisation has identified hazards and recorded the risks assessments associated with RCS:

- a. The organisation shall implement controls to eliminate or minimise the risks from RCS dust.
- b. The organisation shall document controls that are used to minimise or eliminate hazard identified and assessed in the risk register (example in Appendix A 1.2).
- c. The organisation shall demonstrate it has considered the six-step hierarchy of control set out below when eliminating or minimising risks. Specifically:
  - i. Where possible, the Organisation should eliminate processes or equipment that generate and expose workers to concentrations of RCS dust above the limits defined within the Workplace Exposure Standards for Airborne Contaminants and relevant State and Territory Legislation.
  - ii. If it is not possible to eliminate processes or equipment that generate and expose workers to high concentrations of RCS dust, the organisation where possible should substitute alternative work processes or plant and equipment.
  - iii. Organisations shall isolate areas where there is potential RCS dust from designated clean areas to prevent cross contamination.

- iv. Undertaking Engineering controls – see section 7.2
- v. Undertaking Administrative controls – see section 7.3
- vi. Ensuring workers are provided with and effectively use respiratory protective equipment and personal protective equipment – see section 7.3.1 and 7.3.2.

## 7.2 RCS Engineering controls

- a. The Organisation shall use engineering controls as the primary control for reducing RCS personal exposures where higher-level controls do not control RCS exposure risk to safe levels. Primarily this is applying for example, water suppression systems and using local exhaust ventilation systems to remove contaminants, isolating the work areas where RCS dust is generated and isolating ventilation system from other work areas.
  - i. For example, air-conditioning air handlers for clean areas should be separated from contaminated areas.
  - ii. Examples of guidance can be found in Appendix A 1.5 Engineering controls. There is online documentation that is freely accessible on state regulatory/legislative bodies' websites at Safe Work Australia and in each state and territory [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au).
- b. Engineering controls utilised should be documented in the risk register against specific activities (refer Appendix A 1.2 for examples)

## 7.3 RCS Administrative Controls

Where higher level controls (e.g. elimination, isolation, engineering) do not adequately control RCS risks to acceptable levels, then administrative controls shall be implemented to further control RCS risk. Administrative controls include the use of procedures, training, supervision and job design, as follows:

- a. Procedures shall be available in the work area, these should include: Safe Work Procedures (SWP), Safe Work Method Statements (SWMS) and Job Safety Analysis (JSA) where appropriate. An example SWMS is provided in Appendix A 1.4;
- b. Where required, the use of respiratory protective equipment (RPE) and personal protective equipment (PPE); and
- c. Organisations shall ensure workers are inducted and appropriately trained in hazard identification and risk management associated with RCS, including the use, maintenance and storage of RPE and PPE.

Further examples and guidance for administrative controls are provided in 9Appendix A 1.6

### 7.3.1 Respiratory Protective Equipment

Where there is a need for Workers to wear RPE to minimise the risks associated to RCS, the following must be applied:

- a. Fit testing is to be conducted and records maintained:
  - i. Each time a new make or model of respirator is issued;
  - ii. Whenever there is a change in the wearer's facial characteristics or features which may affect the facial seal, for example large weight loss or gain; and
  - iii. On a regular basis upon risk assessment, one or two yearly is reasonable.
- b. If negative pressure (reusable) are required, they require fit testing and workers must be clean shaven.

- c. Loose-fitting powered air-purifying respirators (PAPRs), in which the hood or helmet is designed to form only a partial seal with the wearer's face or hoods which seal loosely around the wearer's neck or shoulders, do not require fit testing.
- d. Disposable respirators are not suitable for workers exposed to RCS.

Note: there are obligations around the physiological and psychological aspects of wearing RPE, including the potential need for a medical assessment prior to doing so. Refer to Section 8.2 for more information on Health Surveillance requirements.

Further guidance can be found in AS/NZS 1715 Standard, selection, use and maintenance of respiratory protective equipment or Model Code of Practice: How to manage work health and safety risks for further information.

### 7.3.1.1 Respiratory Protective Equipment Training Requirements

Training is required for all new workers and for all workers on an ongoing basis. AS/NZS 1715 Standard, selection, use and maintenance of respiratory protective equipment states that the training frequency will depend on the complexity of the program and degree of the hazard, but as a minimum shall be considered at least annually.

RPE Training shall cover the following aspects:

- a. Why RPE is required;
- b. When RPE is required to be worn;
- c. How RPE works;
- d. Limitations of RPE;
- e. How to correctly put on and take off RPE;
- f. How to conduct a negative and positive pressure fit check;
- g. How to clean and maintain RPE;
- h. When and how to replace filters; and
- i. How and where to store RPE when not in use.

### 7.3.2 Personal Protective Equipment (PPE)

Any remaining risks must be minimised with suitable PPE as per the guidance within the Safe Work Australia (SWA) Code of Practice: How to manage work health and safety risks, May 2018 - [https://www.safeworkaustralia.gov.au/system/files/documents/1901/code\\_of\\_practice\\_-\\_how\\_to\\_manage\\_work\\_health\\_and\\_safety\\_risks\\_1.pdf](https://www.safeworkaustralia.gov.au/system/files/documents/1901/code_of_practice_-_how_to_manage_work_health_and_safety_risks_1.pdf).

PPE limits exposure to the harmful effects of a hazard but only if workers wear and use the PPE correctly. Examples of PPE include ear muffs, respirators (refer to 7.3.1), face masks, hard hats, gloves, aprons and protective eyewear.

Where PPE is to be used at the workplace, Organisations must:

- a. Select PPE to minimise risk to health and safety, including by ensuring that the equipment is suitable for the nature of the work and any hazard associated with the work and is of suitable size and fit and reasonably comfortable for the worker who is to use or wear it, including:
  - i. Providing workers with items such as rubber boots, disposable clothing (suits) and/or aprons to prevent contamination of clothing; and
  - ii. Requiring Workers to change RCS contaminated clothing prior to leaving the designated work areas and such contaminated clothing managed by the organisation i.e. not taken home.

- b. Ensure PPE is maintained, repaired and replaced so that it continues to minimise risk to the worker who uses it, including by ensuring that the equipment is clean and hygienic, and in good working order;
- c. Provide the worker with information, training and instruction in the proper use and wearing of PPE, and the storage and maintenance of PPE; and
- d. Ensure that workers so far as reasonably able, use or wear the PPE in accordance with any information, training or reasonable instruction and must not intentionally misuse or damage the equipment.

## 8 Evaluation and Verification

An essential part of controlling risks and adhering to this health and hygiene guideline for RCS is the on-going performance monitoring and evaluation of the success of the risk management process in controlling risks associated with RCS. In effect, workplace monitoring and health surveillance are forms of monitoring and these are dealt with in the following sections.

### 8.1 Workplace personal exposure monitoring

Exposure monitoring is referenced in Division 7 – Section 50 of the Safe Work Australia Model Workplace Health and Safety Regulations 2019, and states:

- a. A PCBU must ensure that air monitoring is carried out to determine the airborne concentration of a substance or mixture at the workplace to which an exposure standard applies if:
  - i. The person is not certain on reasonable grounds whether or not the airborne concentration of the substance or mixture at the workplace exceeds the relevant exposure standard; or
  - ii. Monitoring is necessary to determine whether there is a risk to health.
- b. If monitoring is necessary;
  - i. The monitoring program shall be approved by a Competent Person, for example a certified occupational hygienist (COH), full member of the Australian Institute of Occupational Hygienists or international equivalent qualification, or a person deemed competent through appropriate training and experience; and
  - ii. All monitoring activities shall be conducted by a Competent Person.
- c. Personal exposure monitoring results should be analysed statistically, and results shall be compared to Safe Work Australia's most current workplace exposure standards published in the hazardous chemical information system (HCIS) which is available on Safe Work Australia's website.
- d. Records of monitoring must be kept in accordance with regulatory requirements (refer to Section 9).
- e. Workers must be provided with their exposure monitoring data, generally in a letter. An example of a personal monitoring letter is shown in Appendix A 1.7.

### 8.2 Health surveillance and assessment

Health surveillance involves monitoring the health of workers to identify health issues at an early stage so that further health problems are or can be minimised or prevented.

Workers at risk of RCS exposure shall have the following undertaken by a registered Occupational Physician:

- a. Pre-employment health assessment; (Appendix A 1.8 provides an example of a request for a pre-employment health assessment for a new employee.)
- b. Ongoing health surveillance; and

- c. Post-employment assessment.

The organisation must ensure:

- a. An Occupational / Respiratory Physician is engaged to determine the requirements for health surveillance and oversee the health assessments;
- b. Workers are informed of the need for health surveillance;
- c. Health surveillance is provided by;
  - i. A registered Occupational/Respiratory Physician – details of which can be found at [www.racp.edu.au/about/college-structure/australasian-faculty-of-occupational-and-environmentalmedicine/find-a-consultant](http://www.racp.edu.au/about/college-structure/australasian-faculty-of-occupational-and-environmentalmedicine/find-a-consultant);
- d. The Organisation covers all health surveillance costs; and
- e. Health assessment and surveillance reports are confidentially kept for the minimum required period (refer to Section 9).

### 8.3 Verification of controls

- a. The organisation shall ensure that it has a program to ensure that RCS Engineering, Administrative and PPE controls (identified in Sections 7.2 to 7.3.2) are verified as being effective. Examples of verification could include:
  - i. Inspections of the workplace during operations to ensure that SWPs, SWMS or other procedures are being followed.
  - ii. Visual inspections / Walkthroughs to visually ensure that equipment and controls are operating satisfactorily.
  - iii. Review of documentation and records.
  - iv. Regular equipment maintenance is occurring as required.
  - v. Discussions with workers to identify ongoing RCS hazards and ensure controls are working effectively.
- b. It is recommended that each organisation has some form of action plan that documents scheduled future plans for minimising exposure to RCS.

### 8.4 Incidents and Investigations

Incident investigation is a key to organisation improvement in managing risk of health and safety including RCS. Encouraging workers to report all incidents and near misses relating to potential RCS exposure is a primary way of ensuring that potentially future adverse health outcomes are minimised.

- a. The organisation shall have an incident management process for investigating incidents. Where individuals have been potentially exposed to high levels of RCS, the Organisation should ensure that controls are reviewed and improved, in consultation with workers to prevent reoccurrence of incidents.
- b. If a worker's health assessment (refer section 8.2) indicates the worker may have contracted an illness as a result of exposure to RCS, the organisation should conduct a complete review of the organisations health and safety management systems/program.
- c. The organisation must have ensured that the Regulator in their state or territory is notified of a worker whose medical assessment indicates a disease relating to RCS, and provide all necessary information and documentation requested of them by the Regulator.

- d. Outcomes of investigations (i.e. actions) should be aimed at minimising future occurrences and results of any health surveillance should be communicated. The PCBU should obtain a copy of the report from the Occupational Physician and provide a copy to the worker, and liaise with the Occupational Physician to ensure the worker receives all medical information appropriate to their case.

## 9 Records

Workplaces that have potential to exposure workers to RCS will produce a number of documents that relate to RCS and these must be kept for significant time periods under legislation.

- a. The organisation should demonstrate a record management system for records relating to RCS.
- b. Records must be kept for:
  - i. Training of workers and supervisors (Hazardous substance (i.e. RSC) training records are required to be kept for 5 years). Appendix A 2.0 contains an employee training record template.
  - ii. Exposure monitoring data (30 years from the day the document was made).
  - iii. Fit testing records for respiratory protection (30 years).
  - iv. Safety meetings (7 years)
  - v. Hazard identification, risk assessment and control (5 years).
  - vi. Health assessments (30 years from the day the document was made).
- c. The system should:
  - i. Be secure and private.
  - ii. Ensure the confidential storage of health records.
- d. If an operation ceases, records shall be offered to the relevant Regulator in their state or territory for storage.
- e. Other pertinent records that shall be maintained include;
  - i. Equipment maintenance records.
  - ii. Records of workplace inspections.
  - iii. Incident and investigation records including actions. (Appendix A 1.9 contains an Incident Investigation Form template.)
- f. Organisations must, upon request from workers, provide workers with:
  - i. Any of their air monitoring results (WHS Regulation Section 50); and
  - ii. Their health assessment reports (WHS Regulation Section 378).

## **Health & Hygiene Guidelines**

### **Fabricators Working Safely with Engineered Stone**

#### **Appendix A      Guidance on Health and Safety Policies**

## Appendix A 1.1 Guidance on Health and Safety Policies

All health and safety plans should reflect the organisations health and safety policy and the organisations overall commitment to health and safety. The policy must be developed by management in consultation with workers and reflect the needs of the organisation and should make mention to health as well as safety showing commitment to controlling hazards that impact on worker health, particularly in this instances that of respirable crystalline silica (RCS). This policy should make it clear to management, workers, contractors and visitors that the organisation is clearly committed to ensuring health and safety for all parties that may be involved or affected by working with engineered stone.

The commitment should be made at Senior Management level and be demonstrated by the actions of those at this level.

There are many examples of Health and Safety Policies available on the internet. An example of what a Health and Safety Policy may look like is provided below to assist in developing a Health and Safety Policy.

Guidance on the content of an appropriate health and safety policy is provided in AS/NZS 4801:2001 and AS/NZS 4804:2001. (Note AS/NZS ISO 45001:2018 also provides guidance).

An example is shown below of a Health and Safety Policy

# Health and Safety Risk Management Policy

## Objectives

- XYZ Company objectives are;
  - To create a workplace environment free from work related diseases, injuries and fatalities
  - To support, encourage and support each other's efforts to achieve best practice health and safety performance
  - To eliminate and control activities that may lead to injury or illness
- Our H&S Beliefs
  - We all have a responsibility for health and safety
  - Identifiable hazards and their risks should be controlled or eliminated
  - All tasks, no matter how important or urgent, should be done safely
  - We can improve our health and safety performance
  - All work-related disease, injuries or fatalities are 100% preventable
- Strategy
  - We will implement adequate inductions, and ongoing training
  - We will ensure adequate supervision of workers and contractors to assist them to complete tasks safely
  - We will plan and install equipment and plant that is fit for purpose
  - We will maintain our health and safety management system
  - We will check through a planned internal audit schedule that our systems are operating well
  - We shall examine health and safety hazards in current and future operations **including those hazards associated with Respirable Crystalline Silica and other respirable dust**, by using our risk management process to manage and control risk.

It may be helpful to think through work processes or situations to identify what could go wrong. Note any hazards, risks and control measures identified as you go.

## Appendix A 1.2 Guidance on identifying RCS hazards

There are many ways to demonstrate compliance with the worker consultation process in the risk management process. Organisations should keep records of consultation with workers. Examples of consultation records could include records of tool box meetings, prestart meetings, safety meetings, review of procedures.

There are various codes of practice and practical guidance on risk management available in all states and territories; and on the Safe Work Australia website. These documents are available for download from the regulators' respective websites.

Hazards can be identified in various ways. Typically, these would include:

- Examining records of historical incidents, or online literature and health concerns that have occurred previously;
- Reviewing safety meeting minutes;
- Considering activities or events where RCS exposure is reasonably expected to occur, even if they haven't yet;
- Discussing worker safety concerns;
- Walking through and observing activities within the workplace; and
- Reviewing available information on RCS exposure and equipment/tools used in the work area.

Keeping identified hazards as part of a risk register (set out below) is an appropriate way of recording identified hazards. The risk register set out below has been referenced from regulatory bodies, but the organisation is welcome to use an alternative risk register.

There are various codes of practice available from regulatory bodies that provide guidance on areas where RCS hazards exist including specific guidance for engineered stone products in some states.

## Appendix A 1.3 Assessing RCS risk

Critical to risk management is the risk assessment process. Risk assessment for RCS hazards/activities involves two aspects:

1. Assessing how likely it is for the RCS exposure to occur; and
2. Assessing how severe the outcome of the exposure may be as a result of the exposure.

This process allows for prioritisation of controlling risks of RCS exposure in the workplace.

Assessing the risk adequately requires the use of relevant data sources. Examples of data sources include Safe Work Australia or various state and territory regulatory authorities, industry codes of practice, Australian Standards, manufacturers information, safety data sheets and so forth. Input from workers and various health and safety professionals (e.g. Occupational Hygienists) can also assist.

See below for some examples of relevant data sources:

### Guidance from Work Health Safety Queensland

- [Code of Practice 2019 - Managing respirable crystalline silica dust exposure in the stone benchtop industry](#)
  - [https://www.worksafe.qld.gov.au/\\_\\_data/assets/pdf\\_file/0005/181940/Managing-respirable-crystalline-silica-dust-exposure-in-the-stone-benchtop-industry-Code-of-Practice-2019.pdf](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0005/181940/Managing-respirable-crystalline-silica-dust-exposure-in-the-stone-benchtop-industry-Code-of-Practice-2019.pdf)
- [Construction dust: respirable crystalline silica](#)
  - <https://www.worksafe.qld.gov.au/construction/workplace-hazards/silica-exposure-a-serious-risk-for-construction-workers>
- [Silica – Identifying and managing crystalline silica dust exposure](#)
  - [https://www.worksafe.qld.gov.au/\\_\\_data/assets/pdf\\_file/0006/82806/silica-crystalline-dust.pdf](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0006/82806/silica-crystalline-dust.pdf)
- [Silica – Technical guide to managing exposure in the workplace](#)
  - [https://www.worksafe.qld.gov.au/\\_\\_data/assets/pdf\\_file/0008/83186/silica\\_managing\\_workplace.pdf](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0008/83186/silica_managing_workplace.pdf)
- [Silica and the lung](#)
  - [https://www.worksafe.qld.gov.au/\\_\\_data/assets/pdf\\_file/0015/83130/silica-lung-factsheet.pdf](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0015/83130/silica-lung-factsheet.pdf)
- [Immediate action required to prevent exposure to silica for engineered stone benchtop workers](#)
  - <https://www.worksafe.qld.gov.au/injury-prevention-safety/alerts/whsq/2018/prevent-exposure-to-silica-for-engineered-stone-benchtop-workers>
- [Managing respirable crystalline silica in bench top fabrication](#)
  - <https://www.worksafe.qld.gov.au/injury-prevention-safety/workplace-hazards/managing-respirable-crystalline-silica-in-bench-top-fabrication>
- [Silica exposure health risk for engineered stone benchtop workers](#)
  - [https://www.worksafe.qld.gov.au/\\_\\_data/assets/pdf\\_file/0020/163802/silica-exposure-health-risk-for-engineered-stone-benchtop-workers.pdf](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0020/163802/silica-exposure-health-risk-for-engineered-stone-benchtop-workers.pdf)
- [Protecting workers from exposure to respirable crystalline silica](#)

- [https://www.worksafe.qld.gov.au/\\_\\_data/assets/pdf\\_file/0020/163541/protecting-workers-from-respirable-crystalline-silica-guide.pdf](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0020/163541/protecting-workers-from-respirable-crystalline-silica-guide.pdf)

### Guidance from SafeWork NSW

- [Silica](#)
  - <https://www.safework.nsw.gov.au/hazards-a-z/hazardous-chemical/priority-chemicals/crystalline-silica>
- [Crystalline silica – technical fact sheet](#)
  - <https://www.safework.nsw.gov.au/resource-library/hazardous-chemicals/crystalline-silica-technical-fact-sheet>

### Guidance from WorkSafe Victoria

- [Stonemasons – Preventing crystalline silica exposure: A health and safety solution](#)
  - <https://www.worksafe.vic.gov.au/resources/stonemasons-preventing-crystalline-silica-exposure-health-and-safety-solution>
- [Dust containing crystalline silica in construction work](#)
  - <https://www.worksafe.vic.gov.au/dust-containing-crystalline-silica-construction-work>

### Guidance from Queensland Department of Natural Resources, Mines and Energy

- [Guideline for management of respirable crystalline silica in Queensland mineral mines and quarries](#)
  - [https://www.dnrm.qld.gov.au/\\_\\_data/assets/pdf\\_file/0006/1263669/qgl02-guideline-mines-quarries.pdf](https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0006/1263669/qgl02-guideline-mines-quarries.pdf)

### Further advice

[SWA](https://www.safeworkaustralia.gov.au/silica) (<https://www.safeworkaustralia.gov.au/silica>) is not a regulator and cannot advise you about compliance with WHS laws. If you need help, please contact your state or territory work health and safety authority.

### Australian Tunnelling Society

- [Initial document release from NSW AQWG](#)
  - <http://www.ats.org.au/2018/12/13/initial-document-release-from-nsw-aqwg/>

### Australian Institute of Occupational Hygienists (AIOH) guidance

- [Australian Institute of Occupational Hygienists \(AIOH\) Position Paper on Respirable Crystalline Silica](#)
  - <https://www.aioh.org.au/member-centre/pdf-links-folder/aioh-position-papers/respirable-crystalline-silica-and-occupational-health-issues-2009>
- [Find an occupational hygienist](#)
  - <https://www.aioh.org.au/find-an-occupational-hygienist>

### HSE (UK) guidance

- [Case study: Terry the former stoneworker suffering with silicosis \(HSE\) \(Video\)](#)

- [https://www.youtube.com/watch?v=o9Ni\\_dECPqw&feature=youtu.be](https://www.youtube.com/watch?v=o9Ni_dECPqw&feature=youtu.be)
- [Introducing & Managing RPE in the workplace \(HSE\) \(Video\)](#)
  - [https://www.youtube.com/watch?v=By1LWWnG\\_70](https://www.youtube.com/watch?v=By1LWWnG_70)
- [Local Exhaust Ventilation \(LEV\) workplace fume and dust extraction \(HSE\) \(Video\)](#)
  - <http://www.hse.gov.uk/lev/>

### **Breathe Freely (UK) initiative**

- [Breathe Freely website](#)
  - <http://www.breathefreely.org.uk/>
- [Silica site checklist](#)
  - <http://www.breathefreely.org.uk/assets/bf-cmt-silica-site-checklist-april-2017.pdf>

### **United States Occupational Safety and Health Administration (OSHA) guidance**

- [Crystalline silica overview](#)
  - <https://www.osha.gov/dsg/topics/silicacrystalline/index.html>
- [Controlling silica dust in construction fact sheets](#)
  - <https://www.osha.gov/dsg/topics/silicacrystalline/construction.html#VideosTable1Tasksc>
- [Controlling silica dust in other industries fact sheets](#)
  - [https://www.osha.gov/dsg/topics/silicacrystalline/gi\\_maritime.html](https://www.osha.gov/dsg/topics/silicacrystalline/gi_maritime.html)

### **US Department of Labor**

- [‘Stop Silicosis’ video](#)
  - <https://www.youtube.com/watch?v=HABylzQSuU>

## Generic Risk Register – Example Only.

Location / Workplace

Date

Hazard / Activity	What harm can the hazard cause	Likelihood of the RCS hazard resulting in an illness	Level of risk (high/med/low)	Current controls	Are other controls required?	Responsible person	Due date	Completion date	Review?
<b>Polishing and grinding</b>	Silicosis	Worker does this for a full shift (8 hrs).  Data indicates that there is an exposure risk to RCS  Guidance states that there is still a potential risk of exposure even with water suppression	High	Water suppression on polishing tool	Yes – Half face respirator  Disposable overalls	Team Leader	Insert date		Team leader 30/06/2019  New controls being used.
<b>Clean the work area/ Labourers</b>	Silicosis	Likely – occurs every day for 1-hour	High	Water is used	No sweeping allowed  H-Class Vacuum cleaner to be used  Half face respirator to be worn when cleaning  Disposable overalls to be worn and removed in decontamination area	Team leader	31/05/2019		

<b>CNC Router / Water Jet Workers</b>	Silicosis	<p>Worker does this for a full shift (8 hrs).</p> <p>Data indicates that there is an exposure risk to RCS</p> <p>Guidance states that there is still a potential risk of exposure even with water suppression</p>	High	Water suppression on polishing tool	<p>Yes – Half face respirator</p> <p>Disposable overalls</p>	Team Leader	Insert date		<p>Team leader 30/06/2019</p> <p>New controls being used.</p>
<b>Saw Operators</b>	Silicosis	<p>Worker does this for a full shift (8 hrs).</p> <p>Data indicates that there is an exposure risk to RCS</p> <p>Guidance states that there is still a potential risk of exposure even with water suppression</p>	High	Water suppression on polishing tool	<p>Yes – Half face respirator</p> <p>Disposable overalls</p>	Team Leader	Insert date		<p>Team leader 30/06/2019</p> <p>New controls being used.</p>
<b>Shapers</b>	Silicosis	<p>Worker does this for a full shift (8 hrs).</p> <p>Data indicates that there is an exposure risk to RCS</p> <p>Guidance states that there is still a potential risk of exposure even with water suppression</p>	High	Water suppression on polishing tool	<p>Yes – Half face respirator</p> <p>Disposable overalls</p>	Team Leader	Insert date		<p>Team leader 30/06/2019</p> <p>New controls being used.</p>
<b>Supervisors</b>	Silicosis	<p>Worker does this for a full shift (8 hrs).</p> <p>Data indicates that there is a medium to low exposure risk to RCS</p>	Medium to Low	Isolation	Yes – Half face respirator	Team Leader	Insert date		<p>Team leader 30/06/2019</p> <p>New controls being used.</p>

<b>Office Workers</b>	Silicosis	Worker does this for a full shift (8 hrs).  Data indicates that there is a low exposure risk to RCS	Low	Isolation	None	Team Leader	Insert date		Team leader 30/06/2019  New controls being used.
-----------------------	-----------	---	-----	-----------	------	-------------	-------------	--	---

### CNC Router / Water Jet Workers

Workers who operate CNC routers or Water Jet cutting machines utilise an automated cutting method to modify the ES into the appropriate dimensions and cut outs as required onsite. This work is generally conducted from a control point adjacent to the machine in the fabricator's factory and does not require the worker to conduct the actual cutting process with the stone using hand tools for example. It may include controls such as isolation from the activity and engineering solutions such as water suppression and localised exhaust ventilation to prevent exposures.

### Saw Operators – Requires further info

Saw operators will cut the ES material to the correct size. This may be conducted from an isolated location. This work is generally conducted from a control point adjacent to the machine in the fabricator's factory and/or does require the worker to conduct the actual cutting process with the stone. It may include controls such as isolation from the activity and engineering solutions such as water suppression and localised exhaust ventilation to prevent exposures

### Labourers

Labourers may be required to conduct activities and tasks which bring them into contact with RCS. This may be from primary exposures including conducting housekeeping activities, movement and cleaning of ES products and equipment as well as secondary exposures by assisting with those conducting cutting of stone for example.

### Shapers

Shapers conduct their activities by using power tools to shape the ES in the final required design for installation. This requires softer modifications of the ES to gradually change the shape as required which requires grinding and sanding modifications to the surfaces/edges. These activities may be conducted at the fabrication work shop or onsite as required. These individuals have high potential for exposure.

## **Finishing Workers**

Finishing of the ES may require sawing, cutting and shaping prior to installation of the stone onsite. This may require the use of power and/or hand tools, installation and housekeeping. This group is likely to be exposed to primary and secondary sources of RCS.

## **Polishers**

Polishers smooth the surfaces of the ES to provide the appropriate surface finish to the stone. The polishers are likely to use power tools with various exposure profiles depending on the equipment and method used. Polishing maybe conducted at the fabricator and onsite as required. This group may have primary and secondary exposures.

## **Supervisors**

Supervisors will have diverse roles which may have them enter the areas and oversee activities with the potential to be exposed to RCS. They may be exposed to primary and secondary exposure methods dependent on the activities being conducted.

## **Offices**

Office workers are considered personnel to be working within an office space and not normally tool or equipment-based so are not expected to be exposed to primary sources of RCS due to their activities. There is a high possibility of secondary exposures due to air movement from fabrication areas, staff movements in between spaces and inappropriate atmospheric systems.

## Appendix A 1.4 Example Safe Work Method Statement

Safe Work Method Statement – EXAMPLE ONLY								
Activity				SWMS #				
Location				Date of Works				
DESCRIPTION OF WORKS								
High Risk Work Activities (As per WHS Regulation 291)								
<input type="checkbox"/> Risk of a person falling more than 2 metres	<input type="checkbox"/> Work on a telecommunication tower			<input type="checkbox"/> Demolition of load-bearing / physical integrity of a structure				
<input type="checkbox"/> Involves or likely to involve disturbing asbestos	<input type="checkbox"/> Involves temporary load-bearing support for structural alterations			<input type="checkbox"/> Work in or near a confined space				
<input type="checkbox"/> Work in or near a shaft or trench deeper than 1.5 m or a tunnel	<input type="checkbox"/> Involves the use of explosives			<input type="checkbox"/> Work on or near pressurised gas mains or piping				
<input type="checkbox"/> Work on or near chemical, fuel or refrigerant lines	<input type="checkbox"/> Work on or near energised electrical installations or services			<input type="checkbox"/> Area that may have a contaminated or flammable atmosphere				
<input type="checkbox"/> Involves tilt-up or precast concrete elements	<input type="checkbox"/> Work on, in or adjacent to a road or other traffic corridor			<input type="checkbox"/> Work in an area with movement of powered mobile plant				
<input type="checkbox"/> Work in areas with artificial extremes of temperature	<input type="checkbox"/> Work in or near water or liquid that involves a risk of drowning			<input type="checkbox"/> Involves diving work				
Equipment		Materials		Dangerous Goods		Hazardous Chemicals		
Permits Required	<input type="checkbox"/> Isolations Request	<input type="checkbox"/> Hot Works		<input type="checkbox"/> Drilling		<input type="checkbox"/> Confined Space		<input type="checkbox"/> Working at Heights
	<input type="checkbox"/> Excavation	<input type="checkbox"/> Mobile Crane		<input type="checkbox"/> Demolition		<input type="checkbox"/> Restricted Area		<input type="checkbox"/> Out of Hours
Hazard Types								
<input type="checkbox"/> Biomechanical	<input type="checkbox"/> Biological	<input type="checkbox"/> Chemical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Ergonomic	<input type="checkbox"/> Gravitational	<input type="checkbox"/> Lighting	<input type="checkbox"/> Mechanical	
<input type="checkbox"/> Noise	<input type="checkbox"/> Pressure	<input type="checkbox"/> Psychosocial	<input type="checkbox"/> Radiation	<input type="checkbox"/> Thermal	<input type="checkbox"/> Vibration	<input type="checkbox"/> Work Environ	<input type="checkbox"/> Other:	

Potential Environmental Hazards			
<input type="checkbox"/> Hygiene & Cleanliness (Vehicle / Plant)	<input type="checkbox"/> Contamination	<input type="checkbox"/> Water Use	<input type="checkbox"/> Noise (Plant / Equipment / Vehicles)
<input type="checkbox"/> Air Pollution / Gas Release	<input type="checkbox"/> Gas Release	<input type="checkbox"/> Spills (Ground / Drains / Waterways)	<input type="checkbox"/> Waste Management
<input type="checkbox"/> Pests (Dieback / Weeds / Feral Animals)	<input type="checkbox"/> Conservation Area Works	<input type="checkbox"/> Hot Work / Fire	<input type="checkbox"/> Abrasive Blasting

PPE Requirements																
																
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							

Additional PPE Requirements:

Item	High Risk Activity (Steps in the process)	Hazards (What could cause harm)	Risks (What is the potential loss or damage)	Existing Controls (What controls are currently in place)	Likelihood	Consequence	Risk Score	Risk Rank	Additional Control Measures Required (What other controls are required)	Likelihood	Consequence	Risk Score	Risk Rank
1.	Polishing and Grinding; CNC Router/Water Jet work; Cleaning of work areas; Inspection & Supervision	Exposure to respirable crystalline silica or other inhalable dust	Respirable disease - Silicosis	<ul style="list-style-type: none"> <li>Wear eye, hearing and respiratory protection. Use respirator with at least P2 filtration, fit-tested to worker if half or full-face mask is used.</li> </ul>	4	4	16	H	<ul style="list-style-type: none"> <li>Wear disposable or washable protective clothing</li> <li>Use water suppression on polishing tools.</li> <li>Clean up any slurry produced to prevent the slurry from drying and releasing silica dust into the air. Wet slurry can be</li> </ul>	2	4	8	M

**The activity and controls provided in this SWMS template are for example purposes only.**

**Additional or alternate controls may be required dependent on site specific activities being undertaken.**

									<p>cleaned up using shovels or a wet vacuum equipped with a HEPA filter.</p> <ul style="list-style-type: none"> <li>▪ If possible, use tools fitted with local exhaust ventilation (LEV).</li> <li>▪ Turn the vacuum off and on regularly to reduce dust build-up on the filter, if it is not self-cleaning.</li> <li>▪ For best results, use a vacuum with an actuator switch that allows the vacuum to be powered on and off using the tool.</li> <li>▪ Change vacuum-collection bags as often as possible or according to manufacturer's recommendations.</li> <li>▪ Avoid exposure to dust when changing vacuum bags and cleaning or replacing air filters.</li> <li>▪ Keep work areas free from settled dust by regular cleaning and maintenance to prevent dust from becoming airborne.</li> <li>▪ Provide ventilation using portable exhaust fans or mechanical ventilation to</li> </ul>				
--	--	--	--	--	--	--	--	--	--	--	--	--	--

									<p>ensure air flow movement. Position the ventilation to move contaminated air away from the worker's breathing zones.</p> <ul style="list-style-type: none"> <li>▪ Use damp rags to wipe down RCS contaminated equipment and PPE.</li> <li>▪ Observe proper hygiene by regularly washing face and hands with soapy water</li> </ul>				
2.													
3.													
4.													
5.													
<b>GOVERNANCE</b>													
Legislation			Codes of Practice			Standards			Guidelines				
Regulatory Permits / Licenses				Engineering Details / Certificates				Work Cover Approvals					
<b>PERSONNEL REQUIRED</b>													

Job Role / Position	Duties and Responsibilities	Qualifications / Licenses	Training Required to Undertake Activity

**APPROVALS AND REVIEW**

Approved By				Position				
Signature				Date Approved				
SWMS Team								
Review #:	1	2	3	4	5	6	7	8
Name								
Signature								
Date								

**SIGN ON / ACCEPTANCE**

This SWMS has been developed with all relevant employees / contractors. I have read the above SWMS and I understand its contents. I confirm that I have the skills and training, including relevant certification to conduct the task as described. I agree to comply with safety requirements within this SWMS including risk control measures, safe work instructions, authorised permits and PPE as described.

Employee Name	Job Role / Position	Signature	Date	Time



## RISK ASSESSMENT MATRIX

			Consequence					
			1	2	3	4	5	
			Insignificant	Minor	Moderate	Major	Catastrophic	
Likelihood	5	Very Likely	More than once a year	Medium (5)	High (10)	High (15)	Extreme (20)	Extreme (25)
	4	Likely	Once in 1 – 3 years	Low (4)	Medium (8)	High (12)	High (16)	Extreme (20)
	3	Possible	Once in 3 – 5 years	Low (3)	Medium (6)	Medium (9)	High (12)	High (15)
	2	Unlikely	Once in 5 – 10 years	Low (2)	Low (4)	Medium (6)	Medium (8)	High (10)
	1	Rare	Once in more than 10 years	Low (1)	Low (2)	Low (3)	Low (4)	Medium (5)

Score	Risk Rank	Acceptability
1 - 4	Low	Acceptable
5 - 9	Medium	Tolerable
10 - 16	High	Intolerable
20 - 25	Extreme	Intolerable

Consequence		1	2	3	4	5
Category	Code	Insignificant	Minor	Moderate	Major	Catastrophic
Health & Safety	HS	First Aid	Medical Treatment	Classified Injury (LTI or restricted workcase)	Fatality or severe permanent disability	Multiple fatalities / health effects to > 50 persons
Environmental	EN	Short term environmental impact managed on-site.	Medium term on-site environmental impact managed on site.	Medium term on-site environmental impact needing external assistance.	Very serious, long-term environment impairment of ecosystem functions.	Most serious, irreversible environment impairment of ecosystem functions.

## Appendix A 1.5 Engineering Controls

Examples of engineering controls that should be employed where there is a possibility of potential exposure to RCS while working with ES include:

- A combination of water suppression and local exhaust ventilation is more effective at reducing RCS than either on their own.
- Only use tools and machinery that have been specifically designed for use with water attachments.
- Use an adequate number of water feeds directed at the material and/or tool to prevent visible dust during the process.
- Maintain adequate water pressure to make sure water is reaching the material and/or tool.
- Control water spray from water suppressed tools and machinery using guards, plastic flaps or brush guards.
- Prevent workers from being able to turn water suppression systems down or off during operation.
- Use bridge saws fitted with water attachments to suppress dust when cutting.
- Use water suppressed routers, water jet cutters or bridge saws to complete sink and stovetop cut outs.
- Use hand-held angle grinders fitted with multiple water feeds to deliver water to the cutting disc and point of contact with the stone.
- Use water suppressed wet-edge milling machines or polishing machines.
- Use polishers with a centre water feed to polish or grind stone.
- Exhaust Ventilation. (Where exhaust ventilation is utilised, it should be designed by a “competent person” for example a Ventilation Engineer.)
- Isolating areas of the workplace where dust is generated by other workers.
- Exhausting and filtering air from the isolated area into clean areas poses a hazard.
- Capture excess water generated from water suppressed processes through curbing and channelling.

## Appendix A 1.6 Administrative Control Guidance

Safe Operating Procedures are best developed in consultation with relevant workers and supervisors who should have appropriate experience and training to contribute to the development of these procedures.

There must be clear guidance on the procedure development process to maintain control of the development process so that unauthorised or out of date copies are removed from the work area and workers are trained in the most up to date versions.

Safe Operating Procedures do not need to be long winded and complicated, providing they address the necessary requirements to complete work with ES to control RCS exposure risks safely. The organisation shall develop safe operating procedures or methods of safe work. Workers require training in these procedures.

Examples of work practices that should be employed and may be documented in SOPs, SWMS or JSAs when working with engineered stone include:

- Wet slabs before cutting, grinding or polishing to aid with dust suppression.
- Prevent water pooling and drying on surfaces leaving dry dust deposits.
- Wash hands and face thoroughly before eating, drinking or leaving the workplace.
- Ensure appropriate measures are in place to manage contaminated clothing e.g. not wearing outside of contaminated work areas.
- Don't allow contaminated clothing or equipment to be taken home. Clothing should be laundered at work or by professional laundering companies that deal specifically with contaminated work clothing.
- Implement daily and thorough housekeeping and cleaning procedures for water slurry and settled dust.
- Use low pressure water, wet sweeping or a H class rated vacuum cleaner with a HEPA filter to clean floors, walls and other surfaces.
- Regularly clean vehicle tracks in work areas where dust is transferred on wheels or high use areas and keep them wet during the day.
- Prohibit the use of dry sweeping or compressed air to clean surfaces or clothing. Provide hoses for cleaning between tasks.
- Wet slurries collected during cleaning or cutting etc. should be placed inside a sealed container/bin awaiting disposal. Any manage of waste needs to be assessed.
- Workers' clothes and uniforms must be cleaned frequently to prevent the transfer of RCS dust from work areas to break rooms, other parts of the facility, and importantly, into the home.
- Using industrial vacuum cleaners (Class H) are an easy way to remove excess silica debris from clothes and uniforms.
- Portable industrial vacuum units, fitted with a HEPA filter, should be positioned at the exits of silica work areas, so workers can decontaminate their clothes before leaving.
- Follow the vacuum manufacturer's operator manuals/instructions for changing dust bags and filters.

## Appendix A 1.7 Example personal exposure monitoring letter

### Insert Date

Dear XXXX,

Thank you for participating in the June 2018 atmospheric undertaken at (Insert Workplace).

Sampling was carried out on the (insert date), while you were (insert short description of activities and location of work).

The results of the atmospheric sampling, which were analysed at a NATA Accredited Laboratory, are presented below (Draft Table of Results)

Draft Table of Example Results		
Contaminant Sampled	Respirable Dust	Respirable Crystalline Silica
Result	1.0 mg/m <sup>3</sup>	0.06 mg/m <sup>3</sup>
Exposure Standard	3.0 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
Result as % of Exposure Standard	33%	60%
Risk rating	Low Risk	Medium Risk (investigate)

### Respirable Dust Sample Result

These results indicate that you were exposed to a Low level of Respirable Dust and Respirable Crystalline Silica. Some or all of the tasks performed during the monitoring exposed you to an elevated level of dust. This result was below the action limit of 50% of the workplace exposure standards. The risk of health effects arising from exposure is considered low when compared to the current Safe Work Australia workplace exposure standard.

For respiratory protection to be effective it needs to be correctly fitted and well maintained. If face fitting respiratory protection is worn, the face should be clean shaven.

### Silica Result

These results indicate that you were exposed to a Low level of silica. This result was above the action limit of 50% of the adjusted exposure standard recommended by the Australian Institute of Occupational Hygienists (AIOH). The risk of health effects arising from exposure is considered low when compared to the current Safe Work Australia workplace exposure standard for respirable crystalline silica.

If you would like to discuss your results, please contact (insert title / name). Further information has been attached to further assist.

Yours sincerely,

(Insert name / title of person)

## Interpreting Your Results

Personal monitoring is carried out in the breathing zone of a worker (within 30cm of the front of the face) to assess how much of a particular contaminant the worker breathes in during their shift.

A **contaminant** is anything that has the potential to make you sick if you're exposed to enough of it. The sample result is presented as a concentration (mg/m<sup>3</sup>) and can be compared to the **workplace exposure standard**.

The **workplace exposure standard** is the concentration of a contaminant that an average worker should be able to be exposed to throughout an average working life, without experiencing significant negative health effects. Long shifts and extended rosters are accounted for by adjusting (reducing) the exposure standard.

If you are exposed to a high level of a contaminant, it does not automatically mean that you will get sick. When a high result is reported, management staff are informed, who then investigate and implement controls to minimise exposure for everyone on site.

The potential health effects from overexposure to contaminants recently monitored at are described below.

### Respirable Dust

Respirable dust is made up of very fine dust particles that can reach the deepest parts of the lungs. If too much respirable dust is breathed in, it can cause inflammation of the lung tissue and some more serious lung problems depending on what other contaminants are in the dust.

### Respirable Crystalline Silica

Respirable crystalline silica can be a component of respirable dust so can reach the deep regions of the lungs. Exposure to respirable crystalline silica can cause silicosis, which is a scarring of the lungs causing reduced lung capacity. The disease can worsen after exposure stops and is severely debilitating.

### How Can You Reduce Your Exposure?

- Report it if you're noticing a lot of dust. It may mean the engineering controls put in place to minimise dust are not working properly and need to be addressed.
- Wear your respiratory protection properly:
- Make sure your dust mask is fitted properly – it should seal well around your mouth and nose with no gaps
- Be clean shaven each day – having a beard or stubble will make it almost impossible to get a good seal
- Change dust mask frequently, or if the mask is damaged or has lost its shape

If you have any concerns or questions or need more information on how to properly fit your hearing protection or respiratory protection, please contact your Health & Safety representative

For more information on exposure standards, visit: <http://www.safeworkaustralia.gov.au/sites/swa/whs-information/hazardous-chemicals/exposure-standards/>

## Appendix A 1.8 Pre-Employment Health Monitoring Template Letter

**Date.....(INSERT DATE)**

Dear Dr .....(INSERT NAME)

Thank you for agreeing to undertake respirable crystalline silica health monitoring for the following worker.

Workers Name.....

Date of Birth.....

Description of tasks/s this worker will complete with engineered stone fabrication  
 .....  
 .....

New worker with no history working with engineered stone YES or NO

New worker with history working with engineered stone YES or NO

If yes, please list previous work history with engineered stone:

Business Name	Start Date	Finish Date	Training Received Y/N

I confirm that the minimum health monitoring required has been identified in the attached document; WHSQ Health monitoring standard – crystalline silica. Upon completion of the health monitoring could you please provide a report for this worker that at a minimum contains the information outlined below.

Within the assessment, my business requires a level of health monitoring that includes:

- demographic, medical and occupational history
- records of personal exposure
- standardised respiratory questionnaire
- standardised respiratory function test, including FEV1, FVC, FEV1/FVC – it is strongly recommended this testing be undertaken by an accredited respiratory function laboratory and include testing of diffusing capacity.
- Chest X-ray full size PA view – it is strongly recommended an ILO X-ray be undertaken to allow for reading by a B-reader.

Please include a confirmation in your report that all requirements of the standard have been met.

## Health Monitoring Report

### Worker Details

Name and date of birth of worker

### Medical Practitioner Details:

Your name and registration number

### Business Details

Business name and address

### Health Monitoring Dates

The dates each aspect of health monitoring was undertaken

### Test Results

Details of test results that indicate whether or not the worker has been exposed to respirable crystalline silica

### Assessment

Your professional view whether the worker may have contracted a disease, injury or illness as a result of work with crystalline silica.

### Recommendation

Your professional view regarding:

- Whether any remedial measures are required to be taken.
- Whether the worker can continue in his/her current work.
- Whether medical counselling is required for the worker.

If you have any queries about this request, please contact me on (INSERT PHONE NUMBER).

Yours sincerely,

.....

Signature

Business Representative: .....

Business Name: .....

Business Address: .....

## Appendix A 1.9 Incident Investigation Form

Incident details				
Name of person involved in the incident:			Date of incident:	
Location of incident:				
Incident investigation team:				
What task was being performed at the time of the incident?				
What happened? (e.g. 'employee PPE failed')				
What factors contributed to the incident?				
Environment:		Equipment/materials:		
<input type="checkbox"/> Noise	<input type="checkbox"/> Layout / design	<input type="checkbox"/> Wrong equipment for the job	<input type="checkbox"/> Equipment failure	
<input type="checkbox"/> Lighting	<input type="checkbox"/> Dust / fume	<input type="checkbox"/> Inadequate maintenance	<input type="checkbox"/> Material / equipment too heavy / awkward	
<input type="checkbox"/> Vibration	<input type="checkbox"/> Slip / trip hazard	<input type="checkbox"/> Inadequate guarding	<input type="checkbox"/> Inadequate training provided	
<input type="checkbox"/> Damaged / unstable floor	<input type="checkbox"/> Other	Other		
Work systems:		People:		
<input type="checkbox"/> Hazard not identified	<input type="checkbox"/> No / inadequate risk assessment conducted	<input type="checkbox"/> Procedure not followed / no procedure exists	<input type="checkbox"/> Drugs / alcohol	
<input type="checkbox"/> No / inadequate safe work procedure	<input type="checkbox"/> No / inadequate controls implemented	<input type="checkbox"/> Fatigue	<input type="checkbox"/> Time / production pressures	
<input type="checkbox"/> Hazard not reported	<input type="checkbox"/> Inadequate training / supervision	<input type="checkbox"/> Change of routine	<input type="checkbox"/> Distraction / personal issues / stress	
<input type="checkbox"/> Other		<input type="checkbox"/> Lack of communication	<input type="checkbox"/> Other	
Corrective actions:				
Contributing factor (from above list)	What are we going to do to fix the problem?	Who	When	Completion Date
Issue fixed?				
Name	Signature		Date	
Person involved in incident:				
Manager:				

## Incident Investigation Process Guide

- Establish the facts of the incident, including:
  - What happened?
  - When and where did it happen?
  - What task was being done?
  - Who was involved?
  - Were there any witnesses?
- Gather all necessary background information, for example:
  - maintenance records
  - safe work procedures
  - instructions manuals
  - training records.
- Consider all the potential contributing factors:
  - Environment: Did environmental conditions (e.g. light, noise, floor surfaces) contribute to the incident?
  - Equipment /materials: Did anything about the equipment, materials, tools etc (e.g. equipment failures, missing guards) contribute to the incident?
  - Work systems: Was there something about the system that contributed (e.g. hazard not identified, known hazard not addressed)?
  - People: Was there something the workers, supervisors or contractors did that contributed to the incident (e.g. poor communication, being tired or rushing to finish on time)?
- Determine the primary cause/s of the incident, that is, those which if they hadn't occurred then the incident wouldn't have occurred. Ask yourself *"Would the incident have happened if....?"*
- Identify the root cause / system failures that underlie the primary cause/s and contributing factors.
  - One simple technique for identifying the root cause is the 'Five Whys'. This technique involves asking yourself 'Why did this happen?' and continuing to ask 'Why' for each response until you reach a conclusion that does not generate another 'why' and the underlying cause becomes apparent.
- The final and most important step in any investigation is to take action to fix all the factors that contributed to the incident, starting with the primary cause/s and working through each of the contributing and underlying causes.

## Appendix A 1.10 Training Records

### Individual Training Record

Use this form to record formal and informal training received by a worker. You should include this record in your administrative files for the worker.

**Business Name**

**Location**

**Worker Name**

**Worker Job Title**

### Formal Qualification and Skills

Record formal training from an external provider that has resulted in recognised qualifications, skills or licences. For example, Cert III, forklift licence, first aid officer, etc.

Qualification / skill	Date completed	Training provider	Documentation sighted	Expiry date (if applicable)	Comments
<i>Example</i> <i>First Aid</i>	<i>15/07/16</i>	<i>XYZ training</i>	<i>Certificate from training provider</i>	<i>14/07/16</i>	<i>Needed for first aid officer role</i>

## Task-specific Training Record

Record on-job or informal training where the worker was assessed as competent to perform tasks required for their job. For example, following safe work procedures, using specific equipment.

Task	Date Completed	Trainer's Name	Trainer's Signature	Worker's Name	Worker's Signature
<i>Example RPE Fit testing</i>	<i>10/08/16</i>	<i>Three Em</i>	<i>3M</i>	<i>Breathe Safe</i>	<i>B SAFE</i>





**AESAG**  
AUSTRALIAN ENGINEERED STONE ADVISORY GROUP

## **Health & Hygiene Guidelines**

### **Fabricators Working Safely with Engineered Stone**

#### **Appendix B Fabricator Audit Instrument**

## Fabricator Audit Instrument

This Audit Instrument has been designed for businesses of all types and sizes to measure and verify their level of conformance with the Health & Hygiene Guidelines relating to the risk of Respirable Crystalline Silica.

The questions within the Audit Instrument that have a 'grey background' are considered **MANDATORY** from a safe working practices standpoint. If one of these questions is not answered successfully, then the Fabricator does not pass the audit, and actions plans are to be developed for rectification of any gaps within a specified timeframe agreed to by all parties.

All other questions, whilst being **NON-MANDATORY**, are considered best practice, and action plans are to be developed for rectification of any gaps prior to the next audit.

General			
Conducted On			
Prepared By			
Fabricator Name			
Fabricator Representative			
Audit Participants			
Location			
Is this the first time an RCS assessment has been conducted for this organisation under the current or other trading name?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Main Site			
Health and Safety Management System			
Does the organisation have a Health & Safety Plan (Plan) to achieve the elements of the Health & Hygiene Guidelines? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the Plan maintained and communicated to all employees?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is there evidence of workers being consulted in the development of the Plan?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the Plan reviewed periodically to ensure it remains relevant and appropriate to the organisation?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the organisation have a Health & Safety Policy that incorporates a commitment to control RCS risks? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the Health & Safety Policy displayed in relevant areas of the workplace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
RCS Hazard Identification			
Has the organisation defined and documented the risks associated with working with RCS within the scope of its OHS/WHS Management System?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the organisation identified areas of activities where RCS exists?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the organisation developed a risk register of the identified RCS hazards?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Assessing RCS Exposure Risks			
Have all hazards identified been appropriately risk assessed, e.g. low, medium or high?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have all RCS exposure risk assessments identified been documented in writing?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Control of RCS Exposure Risks, RPE & PPE			

Has the organisation documented controls that are used to minimise or eliminate hazards identified and assessed in the risk register?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Can the organisation demonstrate it has considered the "six-step hierarchy of control"?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the organisation, in consultation with employees, identified the training needs in relation to performing work activities associated with RCS, including training in the use of Respiratory Protective Equipment (RPE)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the organisation ensured that all personnel (including contractors and visitors) have undertaken training appropriate to the identified needs associated with the RCS hazards and risks?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have personnel been assessed as competent, on the basis of skills achieved through education, training or experience, to use RPE for work activities associated with RCS, taking into account the obligations, hazards and risks associated with the work activities?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the training provided been carried out by persons with appropriate skills, knowledge and experience in identifying, managing and controlling RCS hazards and risks? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Why RPE is required.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
When RPE is required to be worn.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
How RPE works.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Limitations of RPE.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
How to correctly put on and take off RPE.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
How to conduct a negative and positive pressure fit check.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
How to clean and maintain RPE.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
When and how to replace filters.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
How and where to store RPE when not in use.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
After implementing RPE controls, are remaining risks minimised with suitable PPE as per the guidance within the Safe Work Australia (SWA) Code of Practice: How to Manage Work Health and Safety Risks, May 2018.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has PPE been selected to minimise risk to health and safety, including by ensuring that the equipment is suitable for the nature of the work?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has PPE been selected to minimise risk to health and safety, including by ensuring that the PPE is of suitable size and fit and reasonably comfortable for the worker who is to use or wear it?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have workers been provided with items such as rubber boots, disposable clothing (suits) and/or aprons to prevent contamination of clothing?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have facilities been provided to allow workers to change RCS contaminated clothing prior to leaving the designated work areas and such contaminated clothing managed by the organisation i.e. not taken home?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is there processes in place to ensure PPE is maintained, repaired and replaced so that it continues to minimise risk to the worker who uses it, including by ensuring that the equipment is clean and hygienic, and in good working order?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have workers been provided with information, training and instruction in the proper use and wearing of PPE, and the storage and maintenance of PPE?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Are there processes in place to ensure that workers are- so far as reasonably able- use or wear the PPE in accordance with any information, training or reasonable instruction and must not intentionally misuse or damage the equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Evaluation and Verification</b>			
Has workplace exposure monitoring been undertaken in areas where there is the risk of exposure to RCS? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the airborne concentration of RCS at the workplace been below the relevant exposure standard?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has monitoring been undertaken to determine whether there is a risk to health of personnel?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the monitoring program been approved by a Competent Person, for example a certified occupational hygienist (COH), full member of the Australian Institute of Occupational Hygienists or international equivalent qualification, or a person deemed competent through appropriate training and experience?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are all monitoring activities conducted by a Competent Person?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are the results analysed statistically, and compared to Safe Work Australia's most current workplace exposure standards (published in the hazardous chemical information system (HCIS) which is available on Safe Work Australia's website)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are records of monitoring kept in accordance with regulatory requirements, and workers provided with their exposure monitoring data, generally in a letter?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is an Occupational / Respiratory Physician engaged to determine the requirements for health surveillance and oversee the health assessments of workers exposed to RCS hazards and risks?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are workers at risk of RCS exposure regularly attending a registered Occupational Physician, as part of a health surveillance program?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are workers at risk of RCS exposure undergoing Pre-employment health assessments?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are workers at risk of RCS exposure undergoing ongoing health surveillance?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are workers at risk of RCS exposure undergoing Post-employment assessments?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are workers informed of the need for health surveillance requirements?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the Organisation cover all health surveillance costs?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are Health assessment and surveillance reports confidentially kept for the minimum required period?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the organisation have a program to ensure that RCS Engineering, Administrative and PPE controls are verified as being effective, and is there some form of action plan that documents scheduled future plans for minimising exposure to RCS?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the organisation use control processes or other methods of controlling RCS risk? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Inspections of the workplace during operations to ensure that SWPs, SWMS or other procedures are being followed.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Visual inspections / Walkthroughs to visually ensure that equipment and controls are operating satisfactorily.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Review of documentation and records.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Regular equipment maintenance is occurring as required.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Discussions with workers to identify ongoing RCS hazards and ensure controls are working effectively.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are workers encouraged to report all incidents and near misses relating to potential RCS exposure?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the organisation have an incident management process for investigating incidents?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Where individuals have been potentially exposed to high levels of RCS, does the Organisation ensure that controls are reviewed and improved, in consultation with workers to prevent reoccurrence of incidents?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
If a worker's health assessment indicates the worker may have contracted an illness as a result of exposure to RCS, does the organisation conduct a complete review of the organisations health and safety management systems/programs?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the organisation have in place a process to ensure the Regulator in their State or Territory is notified of a worker whose medical assessment indicates a disease relating to RCS?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are outcomes of investigations (i.e. actions) aimed at minimising future occurrences and results of any health surveillance communicated by the Occupational Physician to the worker?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Records</b>			
Does the workplace have in place a process to manage documents that relate to RCS hazards and risks, and are these kept for appropriate time periods as per legislative requirements?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to manage documents that relate to the training of workers and supervisors, and are these kept for 5 years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to manage documents that relate to exposure monitoring data for 30 years from the day the document was made?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to manage documents that relate to Fit testing records for respiratory protection for 30 years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to manage documents that relate to Safety meetings, for 7 years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to manage documents that relate to Hazard identification, risk assessment and control, for 5 years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to manage documents that relate to Health assessments, for 30 years from the day the document was made?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to ensure records are secure and private, and one that ensures the confidential storage of health records?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
If an operation ceases, does the workplace have in place a process to ensure records are offered to the relevant Regulator in their State or Territory for storage?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Maintenance of Other Records</b>			
Does the workplace have in place a process to ensure that equipment maintenance records are stored in accordance with business requirements?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the workplace have in place a process to ensure that Records of workplace inspections are stored in accordance with business requirements?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Provision of Records to Workers</b>			
Does the business have in place a process which- upon receiving a request from workers- provides workers with records of air monitoring results?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Does the business have in place a process which- upon receiving a request from workers- provides workers with their health assessment reports?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Onsite Fabrication</b>			
<b>General</b>			
During the audit, was there an opportunity to conduct an onsite installation inspection? – If Yes, please answer the sections below...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Site Personnel</b>			
Onsite Fabricator Representative			
Onsite Fabrication Team			
Location			
<b>Risk Management</b>			
Is there appropriate safety documentation sighted to control risks associated with onsite works?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have all risks associated with the onsite works been assessed with effective controls in place?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have all personnel involved with onsite works been appropriately trained?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are all personnel involved with onsite works wearing appropriate PPE?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has there been exclusion zones established to protect site personnel from RCS dust exposure?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
Are site personnel using appropriate techniques to reduce the risk from RCS dust exposure?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Queensland Requirements</b>			
<b>General</b>			
Does the organisation operate in the State of Queensland and required to follow the mandatory Office of Industrial Relations Code of Practice? – If Yes, please answer the sections below...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Management System</b>			
Does the organisation have a Respirable Crystalline Silica Dust Control Plan? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is there evidence of the plan being developed in consultation with workers?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the plan identify the percentage of silica content of the products being used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the plan identify all the RCS dust (wet or dry) relevant to the workplace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the plan detail the controls to be implemented for each activity that produces RCS dust (wet or dry)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the plan stipulate how control measures will be integrated into daily shift routines, i.e. tool box talks, pre-start checks etc.)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the plan discuss how air monitoring will be used to assess whether controls are working?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the plan detail how the organisations intends to routinely inspect, maintain and monitor controls and equipment to ensure they are clean and functioning properly?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Does the plan discuss how communication of risks and controls, exceedances and reporting mechanisms are to be managed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Air Monitoring</b>			
Has the organisation undertaken baseline air monitoring? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Within six months of the Code of Practice taking effect (i.e. 31 October 2019), or when starting up as a new stone benchtop fabricator business.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
At six monthly intervals for the first two years.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
After establishing a baseline, in response to triggers, or at least every 12 months.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Triggers include - changes to work practices, health monitoring reports, HSR request, Worker consultation etc.</b>			
<b>RCS Risk Management</b>			
Does the organisation prohibit uncontrolled dry cutting or processing of engineered stone?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has the organisation utilised higher order controls in accordance with the OIR Code of Practice - Managing Respirable Crystalline Silica Dust Exposure in the Stone Benchtop Industry? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Water Suppression at the point of dust generation to dampen down or suppress dust before it is released into the air.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Local Exhaust Ventilation to remove airborne contaminants before they reach the breathing zone of the worker.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Natural Ventilation, such as opening doors and windows to provide fresh air to personnel.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Enclosing water spray when using Water Suppression processes, i.e. guards, plastic flaps or brush guards.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Isolation of personnel to reduce to a minimum the number of workers potentially exposed to any residual RCS.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>Respiratory Protective Equipment</b>			
Does the organisation ensure that workers involved in fabricating, processing, cleaning or maintenance work in a fabrication workshop use a hood or head top type, full face or half face powered air purifying respirator (PAPR) with at least a P2 filter?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the organisation ensure that workers involved in processing tasks during on-site installation use a hood or head top type, full face or half face powered air purifying respirator (PAPR) with at least a P2 filter?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the organisation conduct quantitative fit testing? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the fit testing carried out by a competent in-house person, manufacturer, supplier or consultant?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the fit testing carried out before wearing a tight-fitting respirator for the first time?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the fit testing carried out each time a new make or model of tight-fitting respirator is issued?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the fit testing carried out whenever there is a change in the worker's facial characteristics or features which may affect the facial seal (e.g large weight loss or gain)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the fit testing carried out on a regular basis upon risk assessment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is the fit testing carried out at least annually?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Clean Up			
Are stone slabs washed prior to processing?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Are stone slabs washed before sending out for installation?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
During a shift, do Workers' wear respirators when cleaning the area, tools and equipment after finishing each job using an H class vacuum cleaner or wet methods such as low pressure hosing, mopping or wet wiping down surfaces?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Fabrication Processing On Site			
Where onsite trimming or alteration is required, is this conducted in a controlled exclusion zone? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is there water suppression available?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Has local exhaust ventilation been setup and implemented?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Have non-essential Workers and other person's onsite been isolated?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is PAPR being worn by Worker's conducting processing tasks?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Health Monitoring			
Does the organisation ensure that Health Monitoring is provided to Workers? – If Yes...	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided to Shapers?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided to Saw Operators?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided to Finishers?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided to Machine Operators (excluding Saw Operators)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided to Polishers?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided to Labourers / Supervisors involved in the fabrication or installation of stone benchtops?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided before a worker starts work to establish a baseline from which changes can be detected (unless the worker has participated in health monitoring within the previous two years and the results of the tests are available)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided every 12 months (i.e. standardised respiratory questionnaire and standardised respiratory function test)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is it being provided every three (3) years (i.e. a chest X-ray*, the standardised respiratory questionnaire, and standardised respiratory function test)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Signature			
The organisation has provided sufficient evidence against all MANDATORY requirements of the Health and Hygiene Guidelines.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
The organisation hereby authorises the Auditor to release all information pertaining to this audit to the members of AESAG.			
Auditor Name			
Auditor Signature			
Fabricator Representative Name			

Fabricator Representative Signature	
Next Audit Date	

## **Health & Hygiene Guidelines**

### **Fabricators Working Safely with Engineered Stone**

#### **Addendum A Queensland Code of Practice Requirements**

## 1. Overview

The Office of Industrial Relations Workplace Health and Safety Queensland released their approved Code of Practice 2019 – Managing respirable crystalline silica dust exposure in the stone benchtop industry (CoP) with effect 31 October 2019.

The CoP provides the necessary guidance for Persons Conducting a Business or Undertaking (PCBU) within the State of Queensland on how to manage their risks associated to RCS dust exposure in the stone benchtop industry, including work to fabricate, process, install, maintain or remove engineered and natural stone benchtops.

Whilst PCBUs operating in Queensland under the WHS Act and Regulations 2011 are required to comply with all requirements of the CoP as per Section 26A of the WHS Act, this does not preclude PCBUs within other States referring to the guidance within the CoP to assist them in managing their risks.

This addendum provides an overview of additional requirements defined within the CoP, that are additional to what is defined within the body of this document. It is important that reference is made to the requirements within the CoP beyond the overview provided below.

***All information in this addendum has been reproduced in accordance with the copyright requirements detailed within the CoP, with the State of Queensland recognised as the author of the original material, and the rights to have the material unaltered abided by.***

## 2. Planning for Stone Benchtop Fabrication and Installation

### CoP Section 5.2 - Prohibition on Uncontrolled Dry Cutting / Processing

Persons conducting a business or undertaking must not allow workers to undertake uncontrolled dry cutting or processing of engineered or natural stone.

Uncontrolled dry cutting or processing means cutting, grinding, trimming, sanding, polishing or drilling stone containing crystalline silica without effective controls to eliminate or minimise the risk of exposure to respirable crystalline silica. Respiratory protective equipment does not control dust; it protects the workers' health.

Existing work health and safety laws in Queensland effectively prohibit uncontrolled dry cutting or processing of engineered stone or natural stone with high levels of crystalline silica as it will expose workers to levels of respirable crystalline silica that exceed the current workplace exposure standard.

### CoP Section 5.3 – Developing a Respirable Crystalline Silica Dust Control Plan

Due to the significant risks to health from respirable crystalline silica and the large amounts of respirable crystalline silica dust (wet or dry) generated during the work processes involved in fabricating, processing, installing, maintaining or removing stone benchtops it is critical to plan the work so that all sources of dust are identified, and the appropriate combination of control measures are in place. The person conducting a business or undertaking must eliminate or minimise the risk of exposure to respirable crystalline silica so far as reasonably practicable.

A person conducting the business or undertaking that fabricates and processes stone benchtops should develop a written respirable crystalline silica dust control plan to identify all potential tasks that may result in exposure to respirable crystalline silica and the control measures to be used to prevent or minimise exposure.

The respirable crystalline silica dust control plan should consider ways to:

- eliminate or minimise the amount of dust (wet or dry) being produced and released into the air
- prevent dust (wet or dry) being breathed in by workers
- clean up any dust (wet or dry), slurry or other waste produced

- decontaminate workers' clothing and footwear.

The respirable crystalline silica dust control plan should cover:

- the percentage silica content of the product/s being used;
- all sources of respirable crystalline silica dust (wet or dry) relevant to that workplace;
- details of the dust (wet or dry) controls to be implemented for each activity following the hierarchy of controls to manage the risk of respirable crystalline silica exposure as follows:
  - engineering controls, such as water suppression and local exhaust ventilation (LEVs) should always be used to eliminate or minimise dust exposure
  - engineering controls should be used in combination with other controls, for example, barriers to prevent other workers entering a work area where processing of the stone containing crystalline silica is taking place;
  - clean up and disposal of dust or wet slurry, and decontamination of workers clothing
  - appropriate respiratory protective equipment must always be used and always in combination with engineering and other controls (see CoP Section 6 for further information on controlling respirable crystalline silica dust risks and CoP Section 6.3.4 for further information on respiratory protective equipment)
- how the dust (wet or dry) control measures will be integrated into daily shift routines (e.g. tool box talks, pre-start checks and daily cleaning of work areas)
- how air monitoring will be used to assess whether the controls are working, see further information in CoP Section 6.2
- systems in place to routinely inspect, maintain and monitor controls and equipment to ensure they are clean and functioning effectively
- ongoing monitoring and review strategies, particularly in response to incidents, control failure, or exposure standard exceedances
- communication of risks and controls, exceedances and reporting mechanisms.

The respirable crystalline silica dust control plan should be developed in consultation with workers involved in carrying out the tasks and the relevant health and safety representative of the work group if one exists.

If a plan has been developed it should be made available to a medical practitioner carrying out health monitoring. An example respirable crystalline silica dust control plan is provided at **Appendix 2** of the CoP.

Refer to CoP Section **5 Planning for Stone Benchtop Fabrication and Installation** for further guidance.

### 3. Air Monitoring

#### When Air Monitoring is Required

Due to the high silica content of engineered stone, the significant risks to health from respirable crystalline silica and the large amounts of respirable crystalline silica dust generated during uncontrolled stone benchtop fabrication, a person conducting a business or undertaking that fabricates stone benchtops must undertake air monitoring.

Stone benchtop fabrication businesses are required to undertake baseline air monitoring:

- **within six months** of:
  - the code commencing (for existing businesses); or
  - a new stone benchtop fabrication business starting

- at **six monthly intervals** for the first two years.

After a baseline is established, air monitoring is required:

- **in response to the triggers outlined below;** or
- **at least every 12 months.**

Triggers for air monitoring outside of schedule above. When:

- there are major changes to work practices (e.g. new equipment being commissioned), production, processes (e.g. redesign of the work process), procedures or control measures since the last assessment which may reasonably be expected to result in new or additional exposures
- a health monitoring report indicates an adverse result in circumstances where the baseline or previous monitoring reports for that worker did not indicate any abnormality
- an HSR requests a review of control measures (as provided under the existing WHS regulation), and current air monitoring records are not available
- the results of worker consultation indicate monitoring is required, for example, receipt of a substantiated complaint from a worker or their representative, or when a substantiated matter is raised by an entry permit holder regarding possible contravention of the workplace exposure standard, and current air monitoring records are not available
- there are changes to the workplace exposure standard where previous air monitoring results have indicated levels above the new WES.

Refer to CoP Section **6.2 Air Monitoring** for further guidance.

## 4. The Hierarchy of Control Measures

You must always aim to eliminate a hazard and associated risk. Elimination is the most effective control measure and must always be considered before all other control measures. For example, using products that do not contain crystalline silica (quartz) would eliminate the hazard completely. However, care should be taken to ensure any new materials are safe to use and don't introduce new hazards.

If this is not reasonably practicable, the risk **must** be minimised by using one or more of the following approaches:

- **Substitution** – replace a hazardous process or material with one that is less hazardous (e.g. using products with less crystalline silica such as a lower crystalline silica content natural stone).
- **Isolation** – separating the workers from the hazard and work areas (e.g. installing barriers between workers and machines that produce respirable crystalline silica dust (wet or dry), both for workers generating the dust and workers nearby, such as in adjacent offices).
- **Engineering controls** – are physical in nature, including mechanical devices or processes that eliminate or minimise the generation of dust (wet or dry), such as local exhaust ventilation, including on-tool extraction, and/or water suppression should be used to control each dust generating process.

If a risk remains, it must be minimised by:

- implementing administrative controls, so far as is reasonably practicable. For example, plans to routinely clean the work area and vacuum any residual dust off clothing.
- providing workers with, and training them in the use of, personal protective equipment (PPE), for example, respiratory protective equipment (RPE) such as powered air purifying respirators must be used. (see section 7.2.4).

Administrative control measures and PPE rely on human behaviour and supervision. If used on their own, they tend to be least effective in minimising risks.

### Use a combination of methods

A combination of control measures should always be used to manage the risk of respirable crystalline silica when fabricating, processing, installing, maintaining or removing stone benchtops. Using water suppression, a local exhaust ventilation system and respiratory protective equipment together is an example of a combination of control measures.

#### CoP Section 7.1.1 – Water Suppression

Water suppression uses water at the point of dust generation to dampen down or suppress dust before it is released into the air. Water suppression is the most common form of dust control in the stone benchtop industry. Powered hand tools such as grinders or polishers, and large machinery including bridge saws, routers or polishing machines fitted with water feeds are available from manufacturers and retailers in Australia.

Equipment or machinery used for water suppression should:

- have an appropriate ingress protection (IP) rating for use with water suppression
- have the water feed attached and an adequate number of water feeds directed at the contact point to prevent dust being released during the process
- have a consistent water flow and adequate water pressure (usually at least 0.5L/min) during operation
- be fitted with guards, plastic flaps or brush guards designed to manage the water spray or mist containing respirable crystalline silica
- be maintained according to manufacturer's instructions.

See CoP Section **7.2.1 Enclose Water Suppression Processes** for managing respirable crystalline silica contaminated mist resulting from water suppression processes.

Where the slab can be lifted, place a sacrificial backer-board or spoil-board under the stone slab during cutting or trimming. This prevents dust from being released below the slab thereby increasing the effectiveness of on-tool extraction. MDF or particle board would be suitable for this purpose.

Whether a sacrificial backer board can or cannot be used, other controls must be in place. See CoP **Section 7.1 The Hierarchy of Control Measures** for further information.

#### CoP Section 7.1.2 – Local Exhaust Ventilation (LEV)

Local exhaust ventilation is used to remove airborne contaminants before they reach the breathing zone of workers. It is the most effective control for large quantities of respirable crystalline silica dust (dry or wet) as it is applied close to the source of generation. Local exhaust ventilation systems include a shroud (a suction casing that surrounds the wheel/stone), an on-tool hose attachment, and a vacuum system. The dust or mist is collected within the shroud, drawn into the hose attachment to the vacuum, where it is filtered and discharged. When correctly designed and used a local exhaust ventilation system is able to both capture and contain dust or mist generated from a process. See CoP Section **7.3 Clean Up** for information on clean-up of tools and equipment throughout the day.

Silica dust (dry or wet) is very abrasive to local exhaust ventilation equipment, which must be regularly inspected for damage and properly maintained.

#### CoP Section 7.1.3 – Natural Ventilation

Workplaces should have an adequate supply of fresh air.

General ventilation within a room or building can be provided by natural means, such as opening windows and doors. Fans may support the movement of air but should be arranged so that clean air streams are drawn past

workers, and contaminated ones away from workers but not into the direction of others (e.g. workers or adjacent businesses).

Caution should also be exercised to ensure fans do not dry wet slurry before it can be cleaned up.

Improving the general ventilation to a room or building may help reduce the concentration of contaminants in the air but cannot be relied as the way to ensure exposure to respirable crystalline silica is managed. Other methods to prevent respirable crystalline silica being released into the atmosphere must be used.

### CoP Section 7.2 Prevent Workers Breathing in Dust

Respirable crystalline silica carried in the air as dust or in water mist can be further controlled through guards, enclosures and barriers. In addition to those controls respiratory protective equipment and operational procedures should also be used.

Refer to CoP Section **7.2.1 Enclose Water Suppression Processes**, Section **7.2.2 Isolating Workers** and Section **7.2.3 Administrative Controls to Minimise Exposure** for further guidance.

## 5. Use of Respiratory Protective Equipment

### CoP Section 7.2.4 Use Respiratory Protective Equipment

A respiratory protective equipment (RPE) program must be implemented unless suitable and sufficient air monitoring that estimates the true mean of worker exposure has been carried out and exposure has been assessed as being less than the exposure standard using the 95 percent upper confidence limit.

The RPE program should include:

- providing suitable RPE
- fit testing (if relevant to the RPE used)
- a use, maintenance and repair program
- a facial hair policy for tight fitting respirators
- providing information, training and guidance to workers.

RPE should never be used as the primary means for exposure control because higher order controls are more effective. RPE is the least effective form of controlling dust exposure according to the hierarchy of controls, as it does not remove the hazard and relies on correct fit and use by the worker, as well as adequate supervision. However, RPE must be provided and worn correctly for the full duration of the task to manage any residual dust.

### Selecting suitable RPE for respirable crystalline silica

A hood or head top type, full face or half face powered air purifying respirator (PAPR) (see CoP Figure 7) with at least a P2 filter **must** be worn as a minimum by workers carrying out:

- fabricating, processing, cleaning or maintenance work in a fabrication workshop (including labourers and supervisors)
- processing tasks during on-site installation.

PAPR respirators are required because of the high silica content of engineered stone and certain natural stones and the significant health risk from exposure when undertaking these tasks. These types of respirators are also more suitable for Queensland's hot and humid climate and work environments and for wearing for longer periods.

The risks to health from exposure to respirable crystalline silica should also be assessed for any persons working adjacent to or visiting the workshop, e.g. administrative staff or salespeople, and appropriate control measures

implemented. Processes should be in place to ensure incidental access by other staff or visitors is minimised or scheduled for periods when fabrication, processing, cleaning or maintenance is not occurring.

### Quantitative Fit Testing

Due to the high silica content of engineered stone, the associated potential exposure levels and to comply with current Australian Standards, PAPR which rely on a tight seal will require quantitative fit testing by a competent person (i.e. an in-house person, manufacturer, supplier or consultant properly trained and proficient in the fit-test method being used). Fit testing measures the effectiveness of the seal between the respirator and the worker's face. If there is not a good seal, contaminated air, potentially containing RCS, could leak into the respirator.

Workers who are required to wear tightfitting respirators must:

- be clean-shaven; or
- ensure there is no hair between their face and the seal of the respirator face piece as it can interfere with a proper fit. This is important as respirable crystalline silica particles are smaller than facial hair (see CoP Figure 10: Comparison of facial hair with respirable crystalline silica particle size); and
- ensure facial hair, clothing or jewellery do not interfere with the respirator seal or inhalation / exhalation valve operation.

Fit testing is required to be carried out:

- by a competent in-house person, manufacturer, supplier or consultant
- before wearing a tight-fitting respirator for the first time
- each time a new make or model of tight-fitting respirator is issued
- whenever there is a change in the worker's facial characteristics or features which may affect the facial seal (for example large weight loss or gain)
- on a regular basis upon risk assessment
- **at least annually.**

Refer to CoP Section **7.2.4 Use Respiratory Protective Equipment** for further guidance.

## 6. Clean Up

Stone slabs are often delivered to the fabrication business for processing with a layer of dust or sand, or sent out for installation after processing without being washed down. To minimise the risk, stone slabs should be washed prior to processing and again before sending out for installation.

During a shift it is important to keep respirators on and clean the area, tools and equipment after finishing each job using an H class vacuum cleaner or wet methods such as low pressure hosing, mopping or wet wiping down surfaces.

Dry sweeping methods, such as using brooms, or using compressed air to clean up a fabrication workshop are not permitted as these methods can recirculate respirable crystalline silica into the air.

Household vacuum cleaners must never be used where respirable crystalline silica dust is or may be present, even if they have a HEPA filter.

Refer to CoP Section **7.3.1 Workers' Clothing**, Section **7.3.2 Housekeeping** and Section **7.3.3 Wet Slurry and Recycled Water** for further guidance.

## 7. Installing Stone Benchtops

Workers may be exposed to crystalline silica if cutting, grinding, trimming, sanding, drilling or polishing is undertaken during the installation of stone benchtops. Generally, workers have a higher risk of exposure to respirable crystalline silica during fabrication rather than installation of the stone benchtop. However, the more cutting, grinding, trimming, sanding or polishing a worker does the higher the risk to their health.

Respirable crystalline silica will not be released if the benchtop installation is completed without further cutting, grinding, trimming, sanding, drilling or polishing onsite.

### Eliminate the need for cuts or alterations

Workers installing stone benchtops that have been completely fabricated in a workshop with no additional cutting or fabrication required on site, should have minimal exposure to respirable crystalline silica compared to workers involved in fabrication.

The need for cutting, grinding, trimming, sanding or polishing during installation should be eliminated by:

- Accurate measuring – whether by templates, diagrams or infrared measuring devices, eliminating measuring errors will eliminate the need for alterations.
- Cutting sink, tap and stove top holes at the workshop – mark and cut the location and size of holes during the fabrication stage or obtain the sink to ensure it fits before installation.
- Taking the slab back to the fabrication workshop when alterations, other than minor modifications, are required.
- Consulting and communicating with principal contractors and clients to prevent alterations on site.

### Fabrication and processing on site

There may be circumstances that result in the need to fabricate stone benchtops oversize and trim onsite to fit. Where onsite trimming or alteration cannot be avoided it should be conducted in a controlled exclusion zone with additional controls outlined below. Uncontrolled dry cutting, trimming, grinding or polishing stone is prohibited because it exposes workers and others to large amounts of respirable crystalline silica.

When cutting, grinding, trimming, sanding or polishing stone benchtops during installation the person conducting the business or undertaken must manage the risk of exposure to respirable crystalline silica using the control measures set out in section 7 of this code, including:

- Water suppression, see CoP Section **7.1.1 Water Suppression**
- Local exhaust ventilation (LEV) with sacrificial backer board, see CoP Section **7.1.2 Local Exhaust Ventilation**
- Isolating workers, see Cop Section **7.2.2 Isolating Workers**
- Respiratory Protective Equipment, see CoP Section **7.2.4 Use Respiratory Protective Equipment**

In addition to using water suppression and local exhaust ventilation, other measures should be used including:

- conducting work in a well-ventilated area, for example outside (follow manufacturer's instructions and ensure contaminated dust does not travel in the direction of other workers or other premises); and
- excluding workers and others not involved with the cutting or grinding task, for example electricians, by restricting access to the area.

Refer to CoP Section **8 Installing Stone Benchtops** for further guidance.

## 8. Health Monitoring

Health monitoring means monitoring of a person's health to identify changes in their health status because of exposure to certain substances.

Health monitoring for workers exposed to respirable crystalline silica primarily screens for silicosis, chronic obstructive pulmonary disease, autoimmune and other diseases associated with respirable crystalline silica. Health monitoring is necessary to detect the early signs of health effects from exposure to respirable crystalline silica and prevent the development of silicosis. Workers with silicosis do not manifest any symptoms until the disease is well advanced.

### Who should be provided health monitoring

Under the WHS Regulation, a person conducting a business or undertaking **must** ensure that health monitoring is provided to the following workers:

- shapers
- saw operators
- finishers
- machine operators (excluding saw operators)
- polishers
- labourer/supervisor involved in the fabrication or installation of stone benchtops.

This is because there is a significant risk to their health during fabrication, processing and installation of stone benchtops (due to the high silica content of engineered stone and certain natural stones and the amount of respirable crystalline silica generated). Health monitoring of workers in higher risk roles should be undertaken.

In addition, other workers who are regularly exposed to respirable crystalline silica at, or exceeding the exposure standard (e.g. supervisors, maintenance workers, office staff and salespeople) should also be provided with health monitoring.

### When should health monitoring occur?

Health monitoring should be provided:

- before a worker starts work to establish a baseline from which changes can be detected (unless the worker has participated in health monitoring within the previous two years and the results of the tests are available)
- periodically:
  - every 12 months – standardised respiratory questionnaire and standardised respiratory function test;
  - every three years – a chest X-ray\*, the standardised respiratory questionnaire, and standardised respiratory function test
  - more frequently on the advice of a registered medical practitioner with experience in health monitoring
- exiting employment at the workplace - as per baseline if the routine 12-month tests have not been conducted, and it has been more than two years since the previous chest x-ray.

**Note:** as stonemasons may work for multiple workplaces within a few years it is important to ask the worker when they last participated in workplace health monitoring in order to avoid the potential for excessive x-rays (e.g. baseline, periodic, exit).

Refer to CoP Section **9 Health Monitoring** for further guidance.