

Compliance code

Managing exposure to crystalline silica: Engineered stone

Edition 2

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This Compliance Code (**Code**) provides practical guidance for those who have duties or obligations under the Occupational Health and Safety Act 2004 (**OHS Act**) and the *Occupational Health and Safety Regulations 2017* (**OHS Regulations**), in relation to exposure to crystalline silica dust as a result of working with engineered stone.

The Code was developed by WorkSafe Victoria (**WorkSafe**). Representatives of employers and employees were consulted during its preparation. It was made under the OHS Act and approved by Ms Ingrid Stitt MP, Minister for Workplace Safety.

Duty holders under the OHS Act and OHS Regulations should use this Code to assist them in complying with their duties under the OHS legislation. This Code replaces the Compliance Code (Edition 1) – *Managing Exposure to Crystalline Silica: Engineered Stone* (2020) which is no longer in force and effect.

While the guidance provided in the Code is not mandatory, a duty holder who complies with the Code will – to the extent it deals with their duties or obligations under the OHS Act or OHS Regulations – be taken to have complied with those duties or obligations.

If conditions at the workplace or the way work is done raise different or additional risks that are not covered by the Code, compliance must be achieved by other means. WorkSafe publishes guidance to assist with this at **[worksafe.vic.gov.au](https://www.worksafe.vic.gov.au)**.

Failure to observe the Code may be used as evidence in proceedings for an offence under the OHS Act or OHS Regulations. However, a duty holder will not fail to meet their legal duty simply because they have not followed the Code. A WorkSafe inspector may cite the Code in a direction or condition in an improvement notice or prohibition notice as a means of achieving compliance.

A health and safety representative (**HSR**) may cite the Code in a provisional improvement notice when providing directions on how to remedy an alleged contravention of the OHS Act or OHS Regulations.

Approval for the Code may be varied or revoked by the Minister. To confirm the Code is current and in force, go to **[worksafe.vic.gov.au](https://www.worksafe.vic.gov.au)**.

Part 1 – Introduction

Purpose

1. The purpose of this Code is to provide practical guidance to duty holders on how to comply with their duties under the OHS Act to manage the occupational health and safety risks associated with exposure to crystalline silica dust generated by working with engineered stone. This includes duties under Parts 4.1 (Hazardous substances) and 4.5 (Crystalline silica) of the OHS Regulations.

Scope

2. Where engineered stone is used in a workplace, duty holders have duties under both Part 4.1 and Part 4.5 of the OHS Regulations to control health and safety risks associated with exposure to crystalline silica.
3. This Code provides information for duty holders about meeting their obligations under both of those Parts of the OHS Regulations, and other specific duties under the OHS Act where relevant (eg employer's duty to consult with employees).
4. This Code also provides information about how to identify hazards and control the risks associated with exposure to crystalline silica when working with engineered stone.
5. The Hazardous substances compliance code provides practical guidance on how to comply with duties under Part 4.1 of the OHS Regulations.
6. Working with materials *other than* engineered stone that generate crystalline silica dust is not within the scope of this Code. Such work may be **high risk crystalline silica work**, which is work performed in connection with a crystalline silica process that is reasonably likely to result in an airborne concentration of respirable crystalline silica that exceeds half the exposure standard for respirable crystalline silica; or a risk to the health of a person at the workplace. **OHS Regulations r319C**
7. A **crystalline silica process** consists of one or more of the following processes carried out at a workplace:
 - the use of a power tool or other form of mechanical plant to cut, grind, polish or crush material containing crystalline silica, or to carry out any other activity involving material containing crystalline silica that generates crystalline silica dust
 - the use of a roadheader on an excavated face if the material in the face contains crystalline silica
 - a process that exposes a person to crystalline silica dust arising from the manufacture or handling of material that contains crystalline silica
 - the mechanical screening of crushed material containing crystalline silica
 - a quarrying process involving material containing crystalline silica
 - a tunnelling process involving material containing crystalline silica
 - a process determined by WorkSafe to be a crystalline silica process. **OHS Regulations r319B**

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8. For more information on working with silica-containing materials other than engineered stone, go to the WorkSafe website at [worksafe.vic.gov.au/crystalline-silica](https://www.worksafe.vic.gov.au/crystalline-silica).
9. It is not possible for this Code to deal with every risk associated with working with engineered stone. The guidance in this Code needs to be considered with regard to the particular activities undertaken and the characteristics and circumstances of the workplace.

Application

10. This Code applies to a range of duty holders at workplaces where engineered stone is used, including:
 - employers
 - self-employed persons
 - engineered stone licence holders
 - employees, including independent contractors
 - manufacturers
 - suppliers, including importing suppliers.It will also provide useful information for HSRs.
11. A workplace is a place, whether or not in a building or structure, where employees or self-employed persons work. [OHS Act s5](#) For example, workshops where engineered stone slabs are manufactured, benchtop fabrication workshops, and installation sites (for example domestic or commercial premises).

Note: The word **must** indicates a legal requirement that has to be complied with. The words **need(s) to** are used to indicate a recommended course of action in accordance with duties and obligations under Victoria's occupational health and safety legislation. The word **should** is used to indicate a recommended optional course of action.

Many of the duties referred to in this Code apply to an **engineered stone process**. An engineered stone process is defined in the OHS Regulations as a process involving engineered stone at a workplace that generates crystalline silica dust, including (but not restricted to) cutting, grinding or abrasive polishing of engineered stone. [OHS Regulations r319E](#)

Duty holders should contact WorkSafe if they are unsure whether or not the processes undertaken at their workplace are engineered stone processes.

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Who requires an engineered stone licence?

12. Some of the duties referred to in this Code apply to **engineered stone licence holders**. An employer or a self-employed person must hold an engineered stone licence if an engineered stone process is undertaken at the workplace for which the employer or self-employed person is responsible. [OHS Regulations r319Z\(1\)](#)
13. For information on how to obtain an engineered stone licence, go to the WorkSafe website at worksafe.vic.gov.au.
14. A person must not undertake an engineered stone process at a workplace unless the person holds an engineered stone licence to undertake an engineered stone process at that workplace or is an employee of the engineered stone licence holder for that workplace. [OHS Regulations r319Z\(2\)](#)
15. In other words, an employee of an employer who holds an engineered stone licence can undertake an engineered stone process at the workplace to which the licence relates without needing to hold a licence themselves. On the other hand, an employer or self-employed person (such as an independent contractor or sole trader who manufactures engineered stone products) must hold an engineered stone licence themselves if they intend to undertake an engineered stone process at their workplace.
16. An employer or self-employed person, such as a builder or principal contractor, who engages an engineered stone licence holder to undertake engineered stone processes at a workplace for which they are responsible is not required to hold an engineered stone licence themselves.
17. If, on the other hand, the builder or principal contractor intends to undertake the engineered stone process themselves, they must hold an engineered stone licence.
18. WorkSafe acknowledges that builders and principal contractors routinely engage tradespeople as subcontractors to undertake a variety of work, including work that may involve installation of engineered stone products.
19. Engineered stone licence holders (and their employees) may undertake engineered stone processes at the building site if that work is:
 - necessary for performing installation work at the building site and
 - that work cannot be undertaken off-site.
20. The general duties under the OHS Act continue to apply to builders and principal contractors, including the duty to, so far as reasonably practicable, provide and maintain for employees (including independent contractors engaged by the employer and employees of the independent contractor) a working environment that is safe and without risks to health.
21. A person may undertake an engineered stone process at a workplace other than the workplace to which their licence (or their employer's licence) relates if the engineered stone process is necessary for performing installation work at that other workplace and it is not reasonably practicable to undertake the engineered stone process at the workplace to which the licence relates. [OHS Regulations r319Z\(3\)](#)

22. For example, a business has a workshop at which kitchen benchtops are manufactured. The business holds an engineered stone licence which specifies the workshop as the workplace to which the licence applies. Employees of the business also install kitchen benchtops at building sites. If an engineered stone process is necessary to install the benchtop on site and it is not reasonably practicable to do the engineered stone process in the workshop, for example polishing joins in two slabs, then the engineered stone process may be done at the building site. If a benchtop needs to be cut down to size, it may be reasonably practicable for that work to be performed at the workshop including by taking the work back from the building site to the workshop to do the cutting.
23. Any work performed away from the workshop is still subject to the requirements under Part 4.5 of the OHS Regulations.

What is crystalline silica?

24. Crystalline silica is the crystalline form of silicon dioxide, or silica, a naturally occurring mineral that forms a major component of most rocks. The most common type of crystalline silica is quartz, which is found in sand, stone and granite.
25. The OHS Regulations define crystalline silica as crystalline polymorphs of silica including the following substances: quartz, cristobalite, tridymite, and tripoli. [OHS Regulations r5](#)
26. Materials containing crystalline silica are used to make a variety of products, including engineered stone, concrete, ceramic tiles, bricks and mortar. The amount of crystalline silica in these products varies depending on the type of product. To find out how much, or which form of, crystalline silica is in a product, refer to the safety data sheet (**SDS**) or product information from the manufacturer or supplier. Generally quartz is found in engineered stone but cristobalite may also be present.
27. When products containing crystalline silica (such as engineered stone) are subjected to processes such as cutting, grinding or abrasive polishing, very fine dust is released into the air. Some dust particles released, known as respirable crystalline silica, are so small they cannot be seen by the naked eye. Respirable crystalline silica dust can be inhaled deep into the lungs where it can lead to serious health effects.

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What is a crystalline silica substance?

28. A **crystalline silica substance** means any substance that:
- contains more than 1% crystalline silica, and
 - is reasonably likely to be mechanically processed at a workplace, and
 - is not in a respirable form.
- OHS Regulations r5**
29. Engineered stone is a crystalline silica substance. Other products that are not engineered stone, for example concrete panels, may also be crystalline silica substances.

What is engineered stone?

30. Engineered stone is also known as reconstituted, artificial or manufactured stone and quartz conglomerate. It is a manufactured composite stone material that contains resins and has a crystalline silica content of 40 per cent or greater. **OHS Regulations r5** Engineered stone can contain up to 95 per cent crystalline silica.
31. In its solid form, such as in slabs supplied to workplaces, engineered stone is not classified as a hazardous substance, however when engineered stone processes are performed on slabs, hazardous dust, namely respirable crystalline silica, can be released into the air.

32. Engineered stone products are commonly used to make bathroom and kitchen benchtops. People working in this industry are at high risk of exposure to crystalline silica dust, because their work involves cutting, grinding and abrasive polishing of engineered stone with power tools and/or mechanical plant. Other stone products used in this industry also contain crystalline silica however the concentration is often much lower than engineered stone. For more information about the crystalline silica content of common stone products, see **Appendix C**.

Health risks

33. Respirable crystalline silica can be harmful when it becomes airborne and is inhaled. Exposure to high concentrations over a short period of time, or low to medium concentrations over a long period of time can lead to serious diseases, including:
- silicosis
 - lung cancer
 - kidney disease
 - autoimmune disease.
34. Silicosis is a serious, incurable, irreversible and progressive disease. It occurs with the body's immune response to the presence of crystalline silica dust in the small airways and tiny air sacs (alveoli) of the lungs and results in scarring of the lung tissue. In the early stages there will not be any warning symptoms, but as the disease progresses, symptoms such as shortness of breath, coughing, fatigue and weight loss will develop. In severe cases, the damage to the lungs caused by silicosis can require a lung transplant or may lead to death.

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35. There are three types of silicosis:
- Acute silicosis, which can develop after a short exposure to very high levels of crystalline silica dust (within a few weeks or years), and causes severe inflammation and an outpouring of protein into the lung.
 - Accelerated silicosis, which can develop after exposure of 3 to 10 years of moderate to high levels of crystalline silica dust and causes inflammation, protein in the lung and scarring of the lung (fibrotic nodules).
 - Chronic silicosis, which can develop after long term exposure to lower levels of crystalline silica dust and causes fibrotic nodules and shortness of breath. It can include progressive massive fibrosis where the fibrotic nodules in the lung aggregate.
36. In recent years, identified cases of silicosis have been increasing. In particular, cases of accelerated silicosis have significantly increased, most commonly occurring in people working with engineered stone.

Who has duties?

Note: The OHS Act sets out general duties that apply to employers, self-employed persons, employees, manufacturers and suppliers (including importing suppliers). The OHS Regulations specify the way in which duties imposed by the OHS Act must be performed. Duty holders must ensure they are complying with their obligations under both the OHS Act and the OHS Regulations. For information about the compliance framework see **Appendix A**.

Employers

37. Employers must provide and maintain, so far as is reasonably practicable, a working environment for their employees that is safe and without risks to health. **OHS Act s21**
38. To ensure that employers provide a working environment that is safe and without risks to health, they must eliminate risks to health and safety so far as is reasonably practicable, and if it is not reasonably practicable to eliminate the risks to health and safety, reduce those risks so far as is reasonably practicable. **OHS Act s20**
39. Regard must be had to the following matters in determining what is (or was at a particular time) reasonably practicable in relation to ensuring health and safety:
- the likelihood of the hazard or risk concerned eventuating
 - the degree of harm that would result if the hazard or risk eventuated
 - what the person concerned knows, or ought reasonably to know, about the hazard or risk and any ways of eliminating or reducing the hazard or risk
 - the availability and suitability of ways to eliminate or reduce the hazard or risk
 - the cost of eliminating or reducing the hazard or risk. **OHS Act s20**

For further information about what reasonably practicable means when complying with Part 3 of the OHS Act or the OHS Regulations, see the WorkSafe Position *How WorkSafe applies the law in relation to reasonably practicable* at worksafe.vic.gov.au.

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40. Employers must, so far as is reasonably practicable, monitor the health of employees of the employer. [OHS Act s 22\(1\)\(a\)](#)
41. Employers must, so far as is reasonably practicable, monitor conditions at any workplace under the employer's management and control. [OHS Act s22\(1\)\(b\)](#)
42. Employers must, so far as is reasonably practicable, ensure that persons other than employees are not exposed to risks to their health or safety arising from the business activities undertaken by the employer. [OHS Act s23](#)
43. An employer's duties under sections 21 and 35 of the OHS Act, and the regulations that set out the way an employer complies with their duties to employees under those sections of the OHS Act, extend to an independent contractor engaged by the employer and any employees of the independent contractor working at the workplace. However, these extended duties are limited to matters over which the employer has control. [OHS Act s21\(3\) and 35\(2\)](#), [OHS Regulations r8\(1\)](#)
44. For employers in the engineered stone industry, Part 4.1 (Hazardous substances) of the OHS Regulations sets out the way in which a number of OHS duties must be performed because silica dust (including from grinding or cutting silica-containing materials such as engineered stone) attracts a number of specific duties including:
 - ensuring that the risks associated with exposure to silica dust in the workplace are eliminated or reduced, so far as is reasonably practicable [OHS Regulations r163](#)
 - reviewing and, if necessary, revising any measures implemented to control risks associated with silica dust at the workplace [OHS Regulations r164](#)
 - ensuring that employees (including independent contractors) are not exposed to an atmospheric concentration of silica dust generated at the workplace above the exposure standard [OHS Regulations 165](#)
 - ensuring that atmospheric monitoring is carried out when required and the results provided to relevant employees [OHS Regulations r166](#)
 - ensuring that health monitoring is carried out for employees exposed to crystalline silica and a copy of any report provided to WorkSafe when required [OHS Regulations r169](#).
45. There are also a number of specific duties which apply to employers in Part 4.5 of the OHS Regulations. These duties are discussed at paragraph 47 below.

For more information about complying with these duties see Part 3 and Part 4 of this Code.

Self-employed persons

46. A **self-employed person** must ensure, so far as is reasonably practicable, that persons are not exposed to risks to their health or safety arising from the business activities of the self-employed person. [OHS Act s24 and OHS Regulations r11](#)

Specific measures to control risks associated with engineered stone

47. **Employers** and **self-employed** persons must use specific measures to control risks associated with engineered stone including in relation to:
- the use of power tools and mechanical plant to undertake an engineered stone process [OHS Regulations r319S](#)
 - the design and installation of integrated water delivery systems, on tool dust extraction systems and local exhaust ventilation systems [OHS Regulations r319T](#)
 - the use and maintenance of integrated water delivery systems, on tool dust extraction systems and local exhaust ventilation systems [OHS Regulations r319U](#)
 - providing respiratory protective equipment (**RPE**) to employees who undertake an engineered stone process, and ensuring employees use the respiratory protective equipment provided to them. [OHS Regulations r319V](#)
 - the provision of information, instruction and training to employees who use power tools or other mechanical plant to undertake an engineered stone process [OHS Regulations r319W](#)
 - cleaning of the work area where an engineered stone process has been undertaken, and the clothing a person was wearing where an engineered stone process is being, or has been, undertaken. [OHS Regulations r319X](#)

For more information about these duties see Part 3 of this Code.

Engineered stone licence holders

48. **Engineered stone licence holders** have a number of additional duties under Part 4.5 of the OHS Regulations, including to:
- prepare an engineered stone control plan (**ESCP**) before engineered stone processes are undertaken and ensure work is performed in accordance with the ESCP [OHS Regulations r319ZF](#)
 - ensure that any health monitoring required under the OHS Regulations is carried out under the supervision of a specialist occupational and environmental physician or a specialist respiratory and sleep medicine physician [OHS Regulations r319ZD](#)
 - provide copies of any health monitoring reports and atmospheric monitoring results to WorkSafe within 30 days [OHS Regulations r319ZE](#)
 - provide specific information, instruction and training to employees that are likely to be exposed to risks associated with the undertaking of engineered stone processes [OHS Regulations r319ZC](#)
 - provide employees with a statement of work when they cease employment at the workplace [OHS Regulations r319ZG](#)
 - provide information to job applicants on the health risks associated with exposure to crystalline silica dust and the need for, and details of, measures to control those risks. [OHS Regulations r319ZB](#)

For more information about these duties see Part 3 and Part 4 of this Code.

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Employees

49. Employees while at work must take reasonable care for their own health and safety and that of others who may be affected by their acts or omissions in the workplace. Employees must also cooperate with their employer's actions to make the workplace safe and to comply with a requirement under the OHS Act or Regulations. [OHS Act s25\(1\)](#) In a workplace where engineered stone processes are undertaken, this might include:
- following specific information, instruction or training provided for the purpose of undertaking engineered stone processes safely
 - participating in health monitoring
 - using RPE provided by their employer in the correct way.

Manufacturers and suppliers

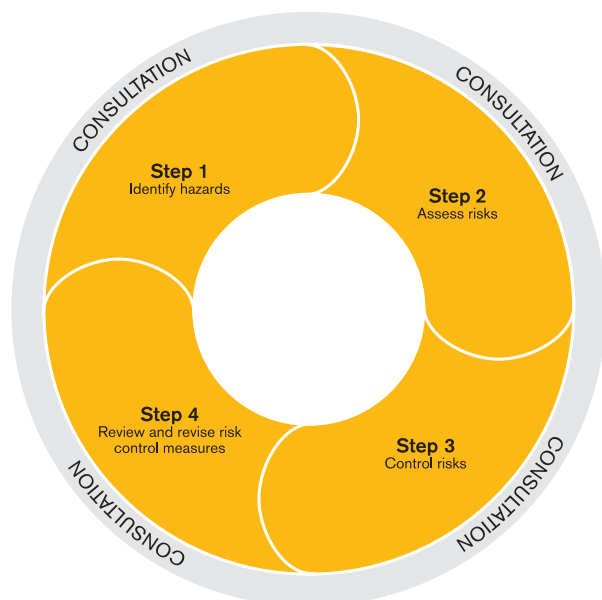
50. Manufacturers and suppliers (including importing suppliers) of substances for use at other workplaces have certain duties under the OHS Act including a duty to provide information about the conditions necessary to ensure their products are safe to work with. [OHS Act ss29-30](#)
51. A manufacturer or supplier (including an importing supplier) of a crystalline silica substance, including engineered stone, must give specific information in writing to any person to whom the crystalline silica substance is supplied on or before the first occasion that the substance is supplied to that person, and on request, to an employer who proposes to use the crystalline silica substance at a workplace. [OHS Regulations r319G](#)
52. A supplier of engineered stone must not supply engineered stone to a person who requires an engineered stone licence and does not have one. [OHS Regulations r319ZA\(1\)](#)
53. For more information about complying with these duties see Part 2 of this Code.

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The risk management process

54. This Code outlines a risk management process (see diagram 1) to help employers comply with their duties under the OHS Act and OHS Regulations. The risk management process involves the following steps:
- Identifying hazards associated with exposure to crystalline silica dust in the workplace (see Part 3.1 of this Code).
 - Assessing, where necessary, any associated risks (to determine appropriate risk controls) (see Part 3.2 of this Code).
 - Controlling risks associated with exposure to crystalline silica dust in the workplace (see Parts 3.3 to 3.4 of this Code).
 - Monitoring, reviewing, and where necessary, revising risk controls (see Part 3.5 of this Code).

Diagram 1 – The risk management process



Consultation

55. Employers must, so far as is reasonably practicable, consult with employees on certain matters related to health or safety that directly affect, or are likely to directly affect them. **OHS Act s35**
56. If employees are represented by an HSR, the consultation must involve that HSR (with or without the involvement of the employees directly). **OHS Act s35(4)** and **OHS Regulations r21**
57. The duty to consult also extends to independent contractors (including any employees of the independent contractor) engaged by the employer in relation to matters over which the employer has control. **OHS Act s35** For example, a builder who engages an engineered stone licence holder to install engineered stone products at their building site must consult with the engineered stone licence holder (and any employees) in accordance with this section.

Note: The characteristics of the workplace will have an impact on the way consultation is undertaken. For example, consider:

- the size and structure of the business
- the nature of the work
- work arrangements (such as shift work)
- characteristics of employees (such as language or literacy)
- any agreed procedures between the employer and employee for undertaking consultations.

Go to **[worksafe.vic.gov.au](https://www.worksafe.vic.gov.au)** for more information on consultation.

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58. The duty to consult with employees and independent contractors includes, for example, when an employer is identifying or assessing hazards or risks to health or safety at the workplace, making decisions about measures to control such risks and proposing changes to the workplace, plant or substances used at the workplace that may affect the health or safety of employees. **OHS Act s35**
59. It is important to consult with your employees as early as possible when planning to:
- introduce new work or change existing work, including when undertaking new engineered stone processes
 - select new plant (including power tools)
 - refurbish, renovate or redesign existing workplaces
 - carry out work in a new environment.
60. Employers who are required to consult with employees must share information about the matter with employees, including independent contractors and HSRs (if any). Employees must be given a reasonable opportunity to express their views and those views must be taken into account before a decision is made. If the employer and the employees have agreed to procedures for undertaking consultation about health and safety matters, the consultation must be undertaken in accordance with those procedures. **OHS Act s35**
61. Employees and contractors may have practical suggestions or potential solutions that can be implemented.

Regulation 21 of the OHS Regulations details how to involve HSRs in consultation where it is required under the OHS Act or OHS Regulations. This includes:

- providing the HSR with all of the information about the matter that the employer provides, or intends to provide, to the employees
- providing that information to the HSR a reasonable time before providing the information to the employees, unless it is not reasonably practicable to do so
- inviting the HSR to meet, and meeting to consult on matters
- giving the HSR a reasonable opportunity to express views about the matter
- taking into account the HSRs views about the matter.

Go to **[worksafe.vic.gov.au](https://www.worksafe.vic.gov.au)** for more information on consultation with HSRs.

❖ Part 2 – Duties of manufacturers and suppliers (including importing suppliers)

62. In its solid form, such as in slabs supplied to workplaces, engineered stone is not classified as a hazardous substance. However, silica dust generated when the slabs are processed (for example through grinding or cutting silica-containing materials) can contain high concentrations of respirable crystalline silica and is a hazardous substance for the purposes of Part 4.1 of the OHS Regulations.
63. Manufacturers and suppliers (including importing suppliers) of substances for use at other workplaces have a number of duties including a duty to provide information about the conditions necessary to ensure their products are safe to work with.
64. Information needs to be provided in a clear and effective format, such as a safety data sheet (**SDS**), for use throughout the supply chain and to end users. The information needs to clearly state the risks associated with processing engineered stone products.
65. Manufacturers and suppliers (including importing suppliers) of crystalline silica substances (including engineered stone) that will be sold or exchanged to another workplace have additional duties, as outlined below.

substance means any natural or artificial substance, whether in the form of a solid, liquid, gas or vapour [OHS Act s5](#)

Duties of manufacturers

66. A person who manufactures a substance, such as engineered stone, who knows, or ought reasonably to know, that the substance is to be used at a workplace, must:
 - ensure, so far as is reasonably practicable, that it is manufactured to be safe and without risks to health if it is used for a purpose for which it was manufactured
 - carry out, or arrange the carrying out of, any testing and examination necessary for the performance of the duty to ensure the substance is safe and without risks to health if it is used for a purpose for which it was manufactured
 - provide adequate information to each person they provide the substance to concerning:
 - the purpose or purposes for which the substance was manufactured
 - the results of any testing or examination
 - any conditions necessary to ensure that the substance is safe and without risks to health if it is used for a purpose for which it was manufactured, and
 - on request, give such information to a person who uses or is going to use the substance. [OHS Act s29](#)

Part 2 – Duties of manufacturers and suppliers (including importing suppliers)

67. A manufacturer of a crystalline silica substance must give specific information in writing to any person to whom the crystalline silica substance is supplied on or before the first occasion that the substance is supplied to that person, and on request to an employer who proposes to use the substance at a workplace. [OHS Regulations r319G](#) [Note the duties in regulations 319G and 319H only apply to the manufacture of a crystalline silica substance at a workplace for sale or exchange to another workplace. [OHS Regulations r319F\(3\)](#)]
68. The information that must be provided is:
- the proportion of crystalline silica contained in the substance, expressed as a percentage, and
 - the name, address and telephone number of the manufacturer or the importing supplier of the crystalline silica substance in Australia, and
 - exposure controls, exposure standards, engineering controls and personal protection information in relation to the crystalline silica substance, and
 - information relating to handling and storage of the crystalline silica substance, including how the substance may be safely used. [OHS Regulations r319G](#)
69. A manufacturer of a crystalline silica substance (such as engineered stone) must review and, if necessary, revise the information referred to above for that substance as often as is necessary to ensure the information is current and accurate, and at least every 5 years. If a manufacturer of a crystalline silica substance revises the above information, they must ensure that they give the revised information to any person to whom the substance is supplied on or before the first occasion that the substance is supplied to that person after the revision. [OHS Regulations r319H](#)
70. The information provided by manufacturers needs to be in English and in a format that is clear and easy to understand, for example an SDS. For more information about SDSs, see the Hazardous substances compliance code at worksafe.vic.gov.au.

Part 2 – Duties of manufacturers and suppliers (including importing suppliers)

Duties of suppliers

71. A supplier of a substance (such as engineered stone) who knows, or ought reasonably to know, that the substance is to be used at a workplace (whether by the person to whom it is supplied or anyone else), must:
- ensure, so far as is reasonably practicable, that it is safe and without risks to health if it is used for a purpose for which it was designed, manufactured or supplied
 - give adequate information to each person to whom the supplier supplies the substance concerning:
 - the purpose or purposes for which the substance was manufactured or supplied
 - any conditions necessary to ensure that the substance is safe and without risks to health if it is used for a purpose for which it was designed, manufactured or supplied
 - on request, give such information to a person who uses or is to use the substance. [OHS Act s30](#)
72. A supplier of a crystalline silica substance (such as engineered stone), including importing suppliers, must give the following information in writing to any person to whom the crystalline silica substance is supplied on or before the first occasion that the substance is supplied to that person, and on request, to an employer who proposes to use the substance at a workplace:
- the proportion of crystalline silica contained in the substance, expressed as a percentage, and
 - the name, address and telephone number of the manufacturer or importing supplier of the crystalline silica substance in Australia, and
 - exposure controls, exposure standards, engineering controls and personal protection information in relation to the crystalline silica substance, and
 - information relating to handling and storage of the crystalline silica substance, including how the substance may be safely used. [OHS Regulations r319G](#)
73. An example of a situation where the supplier duties would apply is to a fabricator/stonemason who supplies engineered stone to a subcontractor to install stone on site.
74. A supplier of a crystalline silica substance (such as engineered stone) must review and, if necessary, revise the information referred to above for that substance as often as is necessary to ensure the information is current and accurate, and at least every 5 years. If a supplier of a crystalline silica substance revises information, they must ensure that they give the revised information to any person to whom the substance is supplied on or before the first occasion that the substance is supplied to that person after the revision. [OHS Regulations r319H](#)
75. Suppliers need to obtain the information about products they are supplying from the manufacturer. The information needs to be in English and in a format that is clear and easy to understand. The most convenient and readily recognisable form to provide this information in is an SDS. An SDS can satisfy the supplier duty to give information about crystalline silica substances provided it contains all of the information outlined in paragraph 72. For more information about SDSs, see the Hazardous substances compliance code at [worksafe.vic.gov.au](https://www.worksafe.vic.gov.au). Product labels or similar documents with information about the product should also be affixed to engineered stone products.

Part 2 – Duties of manufacturers and suppliers (including importing suppliers)

Prohibition on supply of engineered stone

76. A supplier of engineered stone must not supply engineered stone to a person who requires an engineered stone licence and who is not an engineered stone licence holder. OHS Regulations r319ZA(1)
77. Employers or self-employed persons engaged in undertaking an engineered stone process at the workplace for which they are responsible must hold an engineered stone licence. This means that suppliers must not supply engineered stone products to an employer or self-employed person who intends to carry out an engineered stone process if the employer or self-employed person does not hold a valid engineered stone licence.
78. For example, a fabricator must not supply engineered stone benchtops to an unlicensed subcontractor who intends to undertake engineered stone processes including, for example, installing those benchtops.
79. A supplier is able to supply engineered stone products to an employer or self-employed person who does not require a licence, for example to a distributor who is not undertaking any engineered stone processes themselves.
80. Retail suppliers can supply engineered stone products (such as engineered stone tiles and flat pack bathroom units) to someone who does not require a licence, for example if the person supplied is not undertaking any engineered stone processes themselves.
81. A supplier of engineered stone may supply engineered stone to a builder or principal contractor if the builder or principal contractor is not required to hold an engineered stone licence. The builder or principal contractor must not supply that stone to a subcontractor to, for example, install the product if engineered stone processes are required to be undertaken and the subcontractor is unlicensed.
82. Suppliers of engineered stone need to undertake sufficient enquiries to ensure that they do not supply engineered stone to unlicensed persons who require an engineered stone licence.
83. Suppliers of engineered stone can confirm if a person is an engineered stone licence holder by searching the database found on the WorkSafe website at **[worksafe.vic.gov.au/validate-licence](https://www.worksafe.vic.gov.au/validate-licence)** or by contacting WorkSafe.
84. A supplier of engineered stone must record:
 - the name and address of any person to whom engineered stone is supplied and the name and quantity of the engineered stone supplied; and
 - the licence number of the relevant engineered stone licence held by the person to whom engineered stone is supplied (if that person requires an engineered stone licence). OHS Regulations r319ZA(2)
85. The supplier must keep a record of the information above for at least 5 years. OHS Regulations r319ZA(3)

Part 3 – Working with engineered stone

3.1 Identifying hazards

86. Engineered stone processes including the cutting, grinding, or abrasive polishing of engineered stone generate a large amount of crystalline silica dust. When these processes are performed without appropriate controls in place, employees can be exposed to hazardous levels of respirable crystalline silica.
87. Employers need to consider the types of tools that are used for cutting, shaping and joining engineered stone both in fabrication workshops and on job sites during installation. For example, powered hand held tools such as circular saws or grinders generate high levels of airborne dust that contains respirable crystalline silica.
88. Poor housekeeping can be a secondary source of exposure to respirable crystalline silica, including the build-up of settled dust around equipment and workstations, on floors or in waste collection areas, particularly when slurry solutions are allowed to dry out. For example, once settled dust is dry it can be disturbed by:
 - dry-sweeping, compressed air or high-pressure water
 - people or vehicles moving around the work area
 - wind or air movement.

Where exposure to respirable crystalline silica can occur

89. Employees, such as stonemasons/fabricators and machine operators who cut, grind, drill, polish or otherwise work with engineered stone are at the highest risk of exposure to respirable crystalline silica, both in the fabrication workshop and at the installation site. Other trades who make modifications to engineered stone, such as plumbers and electricians, are also at risk of exposure.
90. When crystalline silica dust becomes airborne, it can travel through the workplace, exposing employees performing other tasks in or near the immediate work area to crystalline silica dust. This includes supervisors, maintenance and cleaning personnel, forklift drivers and, at the installation site, other trades.
91. Employers should also consider the potential risk to office workers in workplaces where engineered stone processes are carried out. These employees may be exposed if background levels of respirable crystalline silica are high or if their roles mean they frequently access processing areas. For example, office workers may be exposed if they walk through or perform tasks in or near a benchtop fabrication area.
92. Exposure can also occur when dust is transferred to break areas such as lunch rooms, due to poor housekeeping and personal decontamination practices.
93. Employers should also consider the potential risk to persons other than employees, particularly where workplaces are in congested, built-up areas surrounded by areas accessible by the public.

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3.2 Assessing risks

94. A risk assessment involves identifying hazards or risks to health or safety at a workplace and considering what could happen if employees are exposed to a hazard and the likelihood of it happening.
95. An engineered stone licence holder must prepare an engineered stone control plan (**ESCP**) before work that requires an engineered stone licence is undertaken. An ESCP must identify the work undertaken that requires an engineered stone licence, state the hazards and risks associated with that work, sufficiently describe measures to control those risks and describe how those risk control measures will be implemented. **OHS Regulations r319ZF** Employers need to consider how, where and for how long workers could be exposed to crystalline silica dust.
96. For more details about ESCPs, see the section 'Engineered stone control plans' below.

Crystalline silica exposure standard

What is an exposure standard?

An exposure standard is a maximum airborne concentration of a substance that a person may be exposed to in their breathing zone, averaged over an 8 hour work day and 40 hour work week.

For the purposes of the OHS Regulations, exposure standard means an exposure standard set out in the *Workplace Exposure Standards for Airborne Contaminants* published by Safe Work Australia **OHS Regulations r5**

97. An employer must ensure that an employee's exposure (including independent contractors engaged by the employer and any employees of the independent contractor) to a hazardous substance, such as respirable forms of crystalline silica, does not exceed the exposure standard. **OHS Regulations r165**
98. Employers must, so far as reasonably practicable, eliminate any risk associated with crystalline silica at the workplace.
99. If it is not possible to eliminate the risk, employers must reduce, so far as is reasonably practicable, risks associated with exposure to crystalline silica dust in a workplace. **OHS Regulations r163** The risk must be reduced by applying the hierarchy of control (see below).
100. The exposure standard for respirable crystalline silica dust is currently 0.05 mg/m³ as a TWA (time-weighted average) airborne concentration over eight hours. An eight hour TWA exposure standard is the average airborne concentration of a particular substance permitted over an eight hour working day and five day working week.

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101. WorkSafe Victoria recommends that employees are not exposed to levels above 0.02 mg/m³ as an eight hour TWA. This is a precautionary measure to prevent and minimise the risk of serious health conditions such as silicosis and lung cancer.
102. Where employees have a working day longer than eight hours, a working week longer than 40 hours, or work shift rotations in excess of either eight hours a day or 40 hours a week, the TWA exposure standard needs to be adjusted. Adjustments should be determined by a person with the requisite skills, knowledge and experience, such as an occupational hygienist. Adjustments need to compensate for greater exposure during longer work shifts and decreased recovery time between shifts. For more information about adjusting TWA exposure standards for extended work shifts, see *Safe Work Australia's Guidance on the interpretation of workplace exposure standards for airborne contaminants*.
103. The workplace exposure standard does not represent a line between 'safe' and 'unsafe' airborne concentrations of respirable crystalline silica. Everyone is different, and this means that some people might experience adverse health effects below the exposure standard. Therefore, efforts should be made to reduce exposure as much as possible, taking into account the risks and hazards present in your individual workplace.

Effectiveness of control measures

104. The effectiveness of any control measure used to control exposure to respirable crystalline silica depends on how the control is designed, installed, used and maintained. For example, the level of exposure to airborne dust is affected by whether:
 - water spray is appropriately contained when power tools with water suppression are used
 - integrated water systems use fresh or sufficiently filtered water
 - wet slurry is managed so that it does not dry out
 - RPE is properly fitted.
105. The level of a person's exposure to respirable crystalline silica is also impacted by work procedures after the processing work is complete, such as housekeeping and waste management. For example, even if water suppression is used to control the risk of employee exposure while engineered stone is being processed, the use of inappropriate cleaning methods, such as compressed air or other gases, can significantly increase the level of respirable crystalline silica dust.
106. Employers need to determine and regularly review the effectiveness of controls in their workplace through atmospheric monitoring. For information about when atmospheric monitoring is required, see paragraphs 114 to 117.
107. Employers should also regularly undertake inspections of controls, to ensure they are in good working condition. For more information about inspection and maintenance of controls see Part 3.5 of this Code.

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Atmospheric monitoring

Atmospheric monitoring (personal air monitoring)

108. An employer must, so far as is reasonably practicable, monitor conditions at any workplace under the employer's management and control. **OHS Act s22(1)(b)**
109. Atmospheric monitoring is a procedure by which air is sampled within the breathing zone of a person to measure and evaluate the person's exposure to airborne contaminants. **OHS Regulations r5**
110. The breathing zone is a hemisphere with a radius of 300mm, extending in front of a person's face, and measured from the mid-point of an imaginary straight line joining the ears.
111. Crystalline silica includes the forms quartz, tridymite, tripoli, cristobalite, and any other crystalline polymorphs that may be present in a sample. Quartz, tridymite, tripoli and cristobalite have their own workplace exposure standards. When undertaking atmospheric monitoring, it is the sum of these concentrations that must be compared to the respirable crystalline silica exposure standard, as all forms of crystalline silica have the same target organ. Information from manufacturers and suppliers of engineered stone will indicate what forms of crystalline silica are present in the engineered stone being processed at the workplace. Atmospheric monitoring, analysis and subsequent exposure estimations must account for the different forms of crystalline silica present.
112. The workplace exposure standards are based on the levels found in a person's breathing zone, outside of any respiratory protective equipment that may be in use.

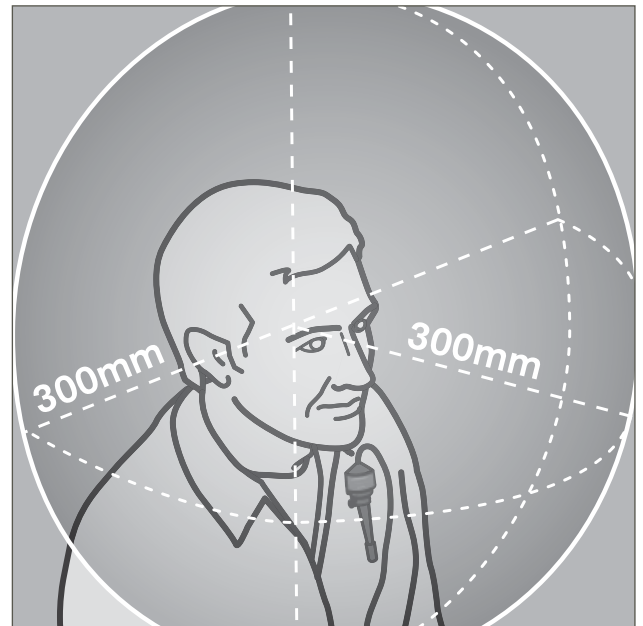


Figure 1: The breathing zone



Figure 2: Personal atmospheric monitoring equipment

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113. While atmospheric monitoring does not prevent disease and is not an alternative to controlling exposure, it is important to:
- monitor conditions at the workplace
 - ensure employee exposure is not exceeding the exposure standard
 - check the ongoing effectiveness of any control measures
 - check that any new controls are working effectively
 - inform employees of the pattern of exposure to the risk of respirable crystalline silica
 - help choose the right kind of respiratory protection
 - inform health monitoring requirements.
116. There is insufficient evidence to show that any single control or combination of controls is guaranteed to keep exposure to respirable crystalline silica below the exposure standard when power tools or other form of mechanical plant are used on engineered stone.
117. Employers need to conduct an ongoing atmospheric monitoring program to assess whether the exposure standard for the various forms of respirable crystalline silica is being exceeded or whether there is a risk to health. As part of the ongoing schedule, employers should conduct atmospheric monitoring:
- when there are changes to work practices, the materials being used or the work environment
 - if a health monitoring report for an employee indicates a negative change in health status which may be related to silica exposure
 - if an HSR requests a review of control measures
 - if there are changes to the workplace exposure standard and previous atmospheric monitoring results have indicated levels above the new standard.

When is atmospheric monitoring required?

114. Under the OHS Regulations, employers must ensure that atmospheric monitoring is carried out for crystalline silica dust generated at or supplied to the employer's workplace where:
- there is uncertainty (based on reasonable grounds) as to whether the exposure standard is or may be exceeded, or
 - atmospheric monitoring is necessary to determine whether there is a risk to health. [OHS Regulations r166\(1\)](#)
115. Atmospheric monitoring is not required if employers have undertaken health monitoring in accordance with the OHS Regulations (refer to Part 4 of this Code) and that health monitoring included biological monitoring. [OHS Regulations r166\(2\)](#)

Who can conduct atmospheric monitoring?

118. Atmospheric monitoring, and the interpretation of the results (including comparison with the exposure standard) needs to be undertaken by a person with the requisite skills, knowledge and experience, such as an occupational hygienist.
119. The Australian Institute of Occupational Hygienists (AIOH) represents the occupational hygiene field. A list of service providers to conduct atmospheric monitoring for silica dust can be found at aioh.org.au.

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What does atmospheric monitoring involve?

120. Atmospheric monitoring needs to be conducted in a way that ensures sufficient samples are collected to be truly representative of the usual employee exposure levels in the workplace. For example, by monitoring tasks involving exposure to respirable crystalline silica dust. Tasks may be split into similar exposure groups such as:
 - the operation of automated cutting machines
 - benchtop finishing with hand tools
 - cleaning or maintenance activities performed in the vicinity of processing work.
121. Depending on the number of employees in the workplace, monitoring may need to be undertaken on more than one occasion. For example, in a small workplace with 6 or fewer employees, several employees may need to be monitored over consecutive days to gather enough sampling for accurate results.
122. More information about personal sampling can be found in AS 2985 *Workplace atmospheres – Method for sampling and gravimetric determination of respirable dust*.

Who can analyse the atmospheric monitoring samples?

123. The analysis of crystalline silica dust samples needs to be undertaken by a laboratory accredited by the National Association of Testing Authorities (NATA) for crystalline silica analysis. To confirm if a laboratory is accredited, go to the NATA website at nata.com.au.

Results of atmospheric monitoring

124. An employer must provide the results of any atmospheric monitoring at their workplace as soon as reasonably possible to any employee who has been, or who may be, exposed to the hazardous substance (such as crystalline silica dust) that is the subject of the monitoring. [OHS Regulations r167](#)
125. The atmospheric monitoring results must also be made available to:
 - a WorkSafe inspector, if required [OHS Act s100](#)
 - HSRs for any designated work groups (where applicable). [OHS Act s69\(1\)](#)
126. If health monitoring is being conducted at the workplace, any atmospheric monitoring results should be provided to the relevant medical practitioner.
127. Engineered stone licence holders must provide to WorkSafe a copy of any atmospheric monitoring results that relate to atmospheric conditions at the workplace to which the licence relates, within 30 days of the results being received by the licence holder. [OHS Regulations r319ZE\(1\)\(b\)](#)
For more information about how to provide atmospheric monitoring results to WorkSafe, go to the WorkSafe website at worksafe.vic.gov.au/crystalline-silica.
128. Employers must keep records of atmospheric monitoring results for 30 years. Those records must be readily accessible to any employees who have been, or may be, exposed to the hazardous substance. [OHS Regulations r168](#)

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Results exceeding the exposure standard

129. An employer must review and, if necessary, revise any measures implemented to control risks associated with respirable crystalline silica dust at the workplace where atmospheric monitoring results indicate that risk control measures are not adequately controlling those risks.
130. Employers must consult with employees and HSRs (if applicable), so far as is reasonably practicable, on certain matters related to health or safety that directly affect or are likely to directly affect them including when making decisions about measures to control risks associated with engineered stone. For more information, see the Consultation section in Part 1 of this Code.
131. As soon as corrective action has been taken to eliminate or reduce the exposure to below the exposure standard, follow up atmospheric monitoring needs to be conducted to confirm that the exposure standard is no longer being exceeded or that there is no risk to health.
132. Information related to the outcome of any corrective actions taken must be provided to a WorkSafe inspector and/or an HSR, where required [OHS Act s100 and s69](#).

Static monitoring

133. Static or fixed position monitoring involves taking samples of air from fixed locations outside the immediate area where engineered stone is being processed.
134. The results of static monitoring should not be used as an indicator of actual employee exposure to a substance. However, in certain circumstances, static or fixed position monitoring can help assess the effectiveness of risk controls.

3.3 Controlling risks

Use of power tool or other form of mechanical plant to undertake an engineered stone process

135. If a power tool or other form of mechanical plant is used to undertake an engineered stone process, an employer or a self-employed person must ensure that the power tool or mechanical plant is used with:
 - a) an integrated water delivery system, or
 - b) an on tool extraction system, or
 - c) if it is not reasonably practicable to use the systems listed at (a) and (b), local exhaust ventilation. [OHS Regulations r319S\(1\)](#)

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An **integrated water delivery system** must:

- deliver a continuous supply of water to the point of contact with the stone while the power tool or mechanical plant is in use, and
- if the system uses recycled or recirculated water, adequately treat that water.

An **on tool dust extraction system** must:

- be commercially available, and
- be connected to a Dust Class H Vacuum or another system that captures any dust generated by the power tool or mechanical plant.

Dust Class H vacuum means a vacuum that complies with the Class H requirements in *AS/NZS 60335.2.69:2017 Household and similar electrical appliances—Safety—Part 2.69: Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use* or its equivalent.

Local exhaust ventilation means an engineering control that captures the emission of an airborne contaminant at its source and transports it to a safe emission point, filter or scrubber.

136. An employer or a self-employed person who is required to use a system outlined above must ensure that the system is designed and installed to, so far as is reasonably practicable, eliminate any risk of exposure to crystalline silica dust or, if it is not reasonably practicable to eliminate the risk, reduce the risk so far as is reasonably practicable. [OHS Regulations r319T](#)
137. An employer or a self-employed person who is required to use a system outlined above must ensure that the system is used and maintained in a manner that, so far as is reasonably practicable, eliminates any risk of exposure to crystalline silica dust or, if it is not reasonably practicable to eliminate the risk, reduces the risk so far as is reasonably practicable. [OHS Regulations r319U](#)
138. For information about on-tool water suppression, on-tool dust extraction and local exhaust ventilation see the Engineering controls section in Part 3.3 of this Code.

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Engineered stone control plans (ESCP)

139. An engineered stone licence holder must prepare a document known as an ESCP before work that requires an engineered stone licence is undertaken. OHS Regulations r319ZF(1)(a) (Note an employer or a self-employed person must hold an engineered stone licence if an engineered stone process is undertaken at the workplace for which the employer or self-employed person is responsible. OHS Regulations r319Z(1))
140. The engineered stone licence holder must ensure that the work is performed in accordance with the ESCP. OHS Regulations r319ZF(1)(b) If the work is not performed in accordance with the ESCP for that work, the employer or self-employed person must stop that work immediately or as soon as it is safe to do so. Work must not resume until the ESCP is complied with or reviewed and, if necessary, revised in accordance with the OHS Regulations. OHS Regulations r319ZF(3)
141. An ESCP must:
- identify the engineered stone processes undertaken by the licence holder that requires an engineered stone licence
 - state the hazards and risks associated with that work
 - sufficiently describe measures to control those risks
 - describe how the risk control measures are to be implemented (including the specific risk controls required for certain engineered stone processes)
 - be set out and expressed in a way that is readily accessible and comprehensible to the persons who use it. OHS Regulations r319ZF(2)
142. A sample ESCP, which includes examples of engineered stone processes, can be found at [worksafe.vic.gov.au/resources/engineered-stone-control-plans-escp](https://www.worksafe.vic.gov.au/resources/engineered-stone-control-plans-escp).
143. The ESCP should be provided in other languages where applicable.
144. When preparing an ESCP and developing risk control measures to be implemented at the workplace, an engineered stone licence holder must eliminate, so far as is reasonably practicable, any risk associated with crystalline silica dust at the workplace.
145. If it is not reasonably practicable to eliminate the risk, the employer must reduce the risk associated with silica dust, so far as is reasonably practicable. OHS Regulations r163
146. The risk must be reduced by applying the hierarchy of control (see Hierarchy of control below).
147. Employers must consult with employees and HSRs (if applicable), so far as is reasonably practicable, on certain matters related to health or safety that directly affect or are likely to directly affect them. For example, when they are identifying or assessing hazards or risks to health or safety at the workplace, or making decisions about measures to control those risks. For more information, see the Consultation section in Part 1 of this Code.
148. An engineered stone licence holder must review and, if necessary, revise the ESCP if there is an indication that risk control measures are not controlling the risks adequately, including after any incident that occurs while working with engineered stone. OHS Regulations r319ZF(4)

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149. An ESCP is not required if a crystalline silica hazard control statement has been prepared in accordance with regulation 319D of the OHS Regulations, and the crystalline silica hazard control statement addresses the matters that are required to be included in the ESCP. [OHS Regulations r319ZF\(5\)](#). For more information on crystalline silica hazard control statements, go to the WorkSafe website at worksafe.vic.gov.au.

Hierarchy of control

150. In addition to the requirements under Part 4.5 of the OHS Regulations, the hierarchy of control set out in Part 4.1 of the OHS Regulations must also be followed when controlling risks associated with exposure to silica dust as a result of undertaking engineered stone processes. (Note other provisions contained in Part 4.1 also apply in addition to the hierarchy of control set out in regulation 163)
151. Under this hierarchy of control, employers must consider and apply the highest level of control (starting from level 1 – see table 1), so far as is reasonably practicable, before considering the level below it. Controlling the risk may involve a single control measure or a combination of two or more different controls. Examples of controls are set out in table 1.
152. An employer must, so far as is reasonably practicable, eliminate any risk associated with exposure to silica dust at their workplace. [OHS Regulations r163\(1\)](#)
153. If it is not reasonably practicable to eliminate a risk associated with silica dust, the employer must reduce the risk so far as is reasonably practicable by:
- substituting the substance with a substance that is less hazardous, or a less hazardous form of the substance, or
 - isolating the source of exposure to the hazardous substance, or
 - using engineering controls, or
 - using a combination of these measures. [OHS Regulations r163\(2\)](#)
154. If the controls listed in paragraph 153 have been implemented, so far as is reasonably practicable, and a risk remains, an employer must reduce the risk so far as is reasonably practicable by using administrative controls. [OHS Regulations r163\(3\)](#)
155. If the controls listed in paragraphs 153 and 154 have been implemented, so far as is reasonably practicable, and a risk remains, the employer must reduce the risk, so far as is reasonably practicable, by providing appropriate personal protective equipment to employees at risk. [OHS Regulations r163\(4\)](#) [Note that employers are required to provide respiratory protective equipment (RPE) to employees who undertake engineered stone processes and ensure that employees use the RPE provided. For more information, see Respiratory protective equipment (RPE) below.]

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Table 1 – Hierarchy of control

Level	Example
Level 1: Eliminate the risk	Use materials that do not contain crystalline silica.
Level 2: Reduce the risk by using substitution	Use materials with a lower crystalline silica content, such as natural stone.
Level 3: Reduce the risk by using isolation	Use automated wet machines to cut, grind or polish engineered stone slabs.
Level 4: Reduce the risk by using engineering controls	Use hand held tools with on-tool water suppression, dust extraction or local exhaust ventilation.
Level 5: Reduce the risk by using administrative controls	Housekeeping, scheduling, zones policies, procedures, layout.
Level 6: Reduce the risk by providing personal protective equipment	Employers are required to provide respiratory protective equipment (RPE) to employees who undertake engineered stone processes and ensure that employees use the RPE provided.

156. Employers may need to use a combination of control measures to minimise the risk of exposure so far as is reasonably practicable at their workplace.
157. Employers must consult, so far as is reasonably practicable, with their employees, HSRs (if any) and independent contractors, when making decisions about how to control risks to health and safety at the workplace and when proposing changes to the workplace, plant or substances used at the workplace that may affect the health or safety of employees. [OHS Act s35](#)
158. When investigating risk control measure options, employers need to also consider whether a risk control measure will introduce additional risks.

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Eliminate

159. Elimination of the risk is the most effective control measure and must be implemented, so far as is reasonably practicable, before all other control measures are considered. **OHS Regulations r163(1)** For example, using products that do not contain crystalline silica would eliminate the hazard completely.
160. For installation work, elimination involves ensuring no dust is generated at the installation site. For example, by:
- asking builders to provide a template for pre-cutting the silica-containing materials at the fabrication workshop
 - ensuring installation measurements are correct - using lasers may assist in taking precise measurements for installations
 - asking builders to communicate any installation changes before you attend the site, such as changes to location or measurements
 - when modifications are found to be necessary, taking the slab back to the fabrication workshop rather than undertaking processing at the installation site. (Note: only modifications that are necessary for performing installation work and that cannot reasonably be undertaken at the workshop are permitted (lawfully) to be undertaken off-site. For more information, see the discussion of OHS Regulation 319Z(3) at paragraphs 21 to 23.)

Substitute

161. Substitution involves replacing a hazardous substance with a less hazardous substance, or a less hazardous form of the substance. When working with engineered stone, it may not be possible to eliminate the risk associated with crystalline silica dust, however working with materials that have a lower crystalline silica content will reduce the risk.

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Isolate

162. Where possible, employers should use isolated automated wet machines for cutting, grinding, or abrasive polishing of engineered stone.

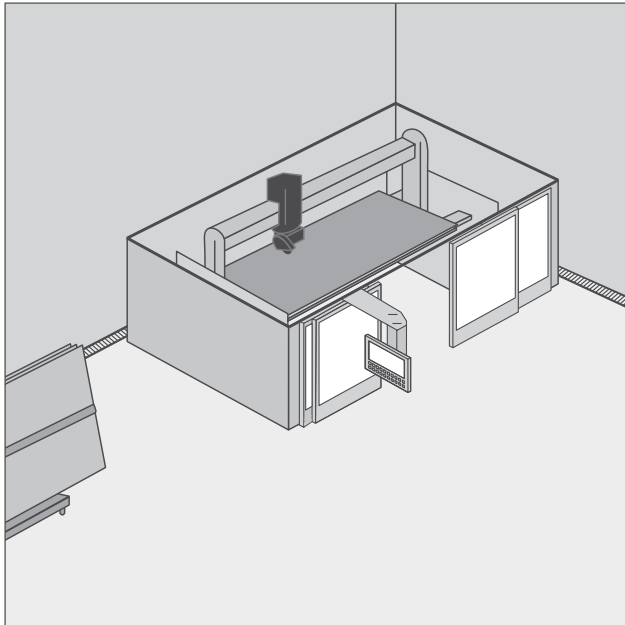


Figure 3: Automated wet cutting machine, isolated from other work areas

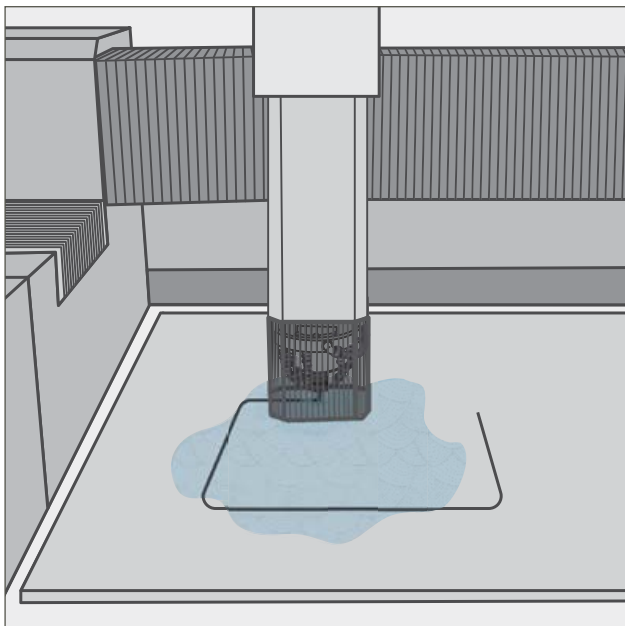


Figure 4: CNC machine for cutting shapes, such as sink holes

163. If automation is not a reasonably practicable control, other isolation measures such as completing work outside should only be used in combination with engineering controls (see Engineering controls section below).

164. Where minor modifications of engineered stone benchtops at an installation site are unavoidable, the work needs to be undertaken in a controlled exclusion zone with access restricted to people involved in the task. The exclusion zone should be in a well-ventilated area, for example outside or in a dedicated room at the site. Employers need to ensure contaminated dust does not travel in the direction of other employees or premises. Any work performed at an installation site is also subject to the requirements for working with engineered stone under Part 4.5 of the OHS Regulations.

165. Employers need to provide employees with a separate room or area away from dust generating processes for food preparation and dining.



Figure 5: Controlled exclusion zone with restricted access

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Engineering controls

Water suppression

166. Water suppression uses water at the point of dust generation to dampen down or suppress dust before it is released into the air. It is one of the most common dust control measures.

167. Where water suppression is used with power tools or other mechanical plant (such as grinders, bridge saws, routers or polishing machines) to undertake an engineered stone process, an integrated water delivery system must:
- deliver a continuous supply of water to the point of contact with the stone while the power tool or mechanical plant is in use, and
 - if the system uses recycled or recirculated water, adequately treat that water.
- OHS Regulations r319S(2)

Electrical hazards when using water suppression

Only tools and machinery that have been designed for use with water attachments should be used with water suppression.

168. While water suppressed machinery and tools provide an effective means of reducing exposure to crystalline silica dust, their use needs to be controlled to ensure other hazards are not created. For example, electrical hazards or the spread of mist containing crystalline silica dust. Automated machines are available that fully submerge the engineered stone under water.

These machines enable the entire engineered stone process to be undertaken underwater (dust is captured within the water bed).

169. The appropriate tool needs to be used for the task. For example, in some cases a pneumatic tool may be more appropriate than an electrical tool. To help in determining which tool is best for the job, consult with your supplier.
170. Water suppressed powered hand held tools, where possible, should be interlocked with the water feed, so that when the tool is activated, spraying commences slightly before processing starts (such as cutting or grinding).

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Figure 6(a): Suitable water suppression: grinder being used to cut slab

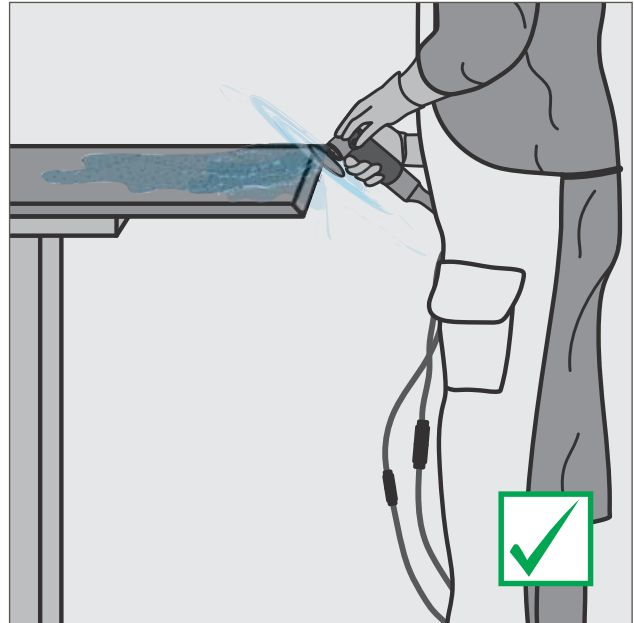


Figure 6(b): Suitable water suppression: polisher being used to finish benchtop

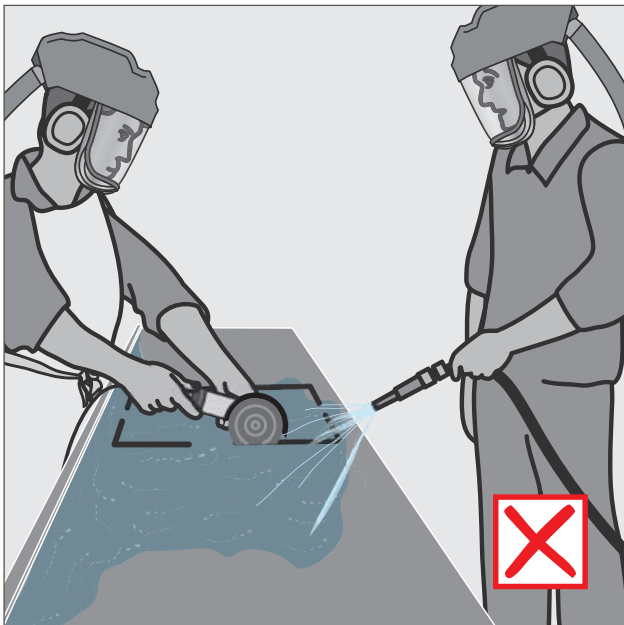


Figure 6(c): Inappropriate water suppression: separate hose being directed at work

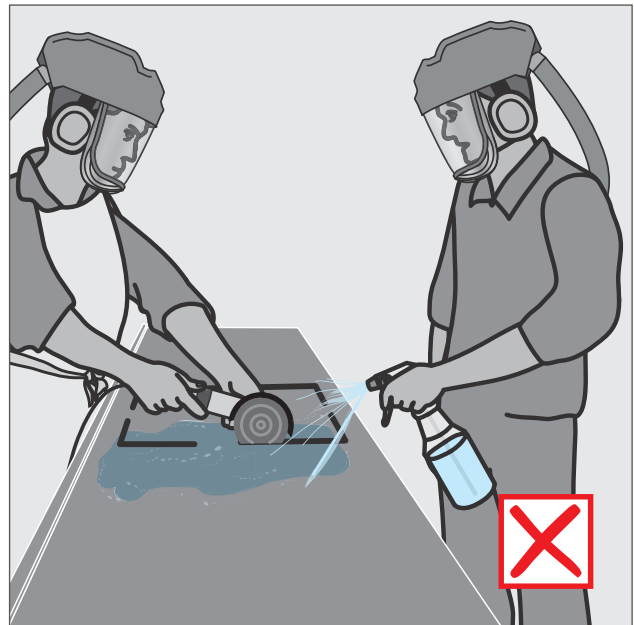


Figure 6(d): Inappropriate water suppression: use of spray bottle

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171. Equipment or machinery used for water suppression should:
- be designed for use with water suppression
 - be designed to minimise over spray
 - 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 adequate water pressure (usually 0.5L/min) during operation
 - be fitted with guards, plastic flaps or brush guards designed to manage the water spray
172. Integrated water delivery systems must be used and maintained in accordance with OHS regulation 319U (see paragraph 137).

Enclosing water spray

173. When water is applied to rotating tools, water spray contaminated with crystalline silica dust is ejected from the process. This spray can expose workers to crystalline silica dust by:
- being breathed in as water mist
 - depositing on surfaces, including clothing, and drying, then becoming airborne when it is disturbed.
174. Controls need to be used to enclose water spray when using water suppression systems, such as guards, plastic flaps or brush guards around the rotating blade, tool or equipment. Employers need to ensure guards are routinely maintained and cleaned.
175. The design of power tools or other mechanical plant is important in determining whether employees are protected from water mist containing crystalline silica dust particles. Integrated water delivery systems used with power tools or other mechanical plant must be designed and installed in accordance with OHS regulation 319T (see paragraph 136).
176. Guarding needs to be fitted so that it will appropriately suppress water mist when the tool is being used at different angles by the operator.
177. In addition, other controls that further minimise exposure by managing the water spray from water suppression processes include:
- increasing the distance between the work process and the employees (for example operator positioning when using bridge saws or routers)
 - increasing the distance between employees using powered hand held tools and others at the workplace.

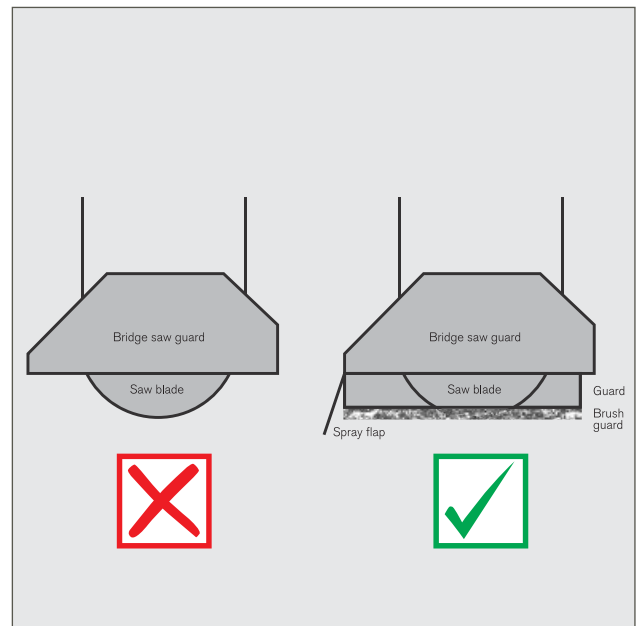


Figure 7: Additional guards to bridge saw

Part 3 – Working with engineered stone



Figure 8: Good spray control – guarding deflects water down towards the slab

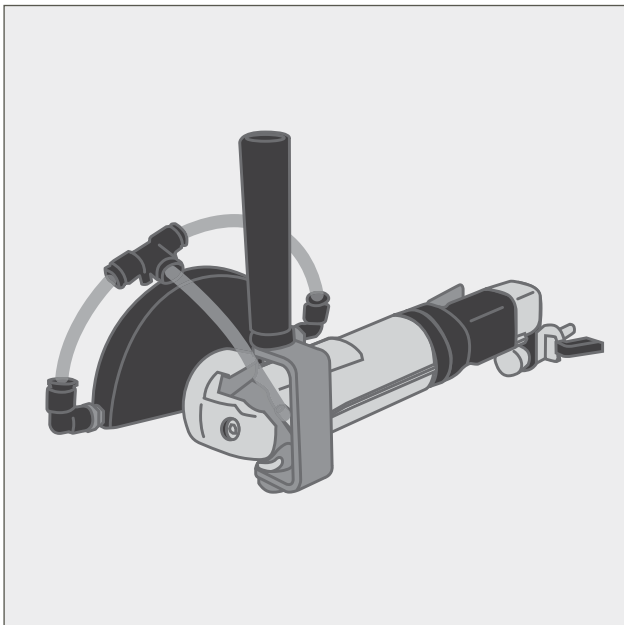


Figure 9: Example of appropriate guarding on a wet grinder

Water run off

178. Employers need to ensure that run off from wet processes is captured, for example in purpose-built channels underneath the work area, or for work undertaken at the installation site, by using a drip tray underneath the cutting table or trestle.
179. Water run off should be contained by floor bunding, to prevent water from spreading to other work areas and to direct water towards drains.
180. Wet slurry needs to be managed to ensure it does not dry and release crystalline silica dust into the air. For more information about the management of wet slurry, see the *Wet slurry* section below.

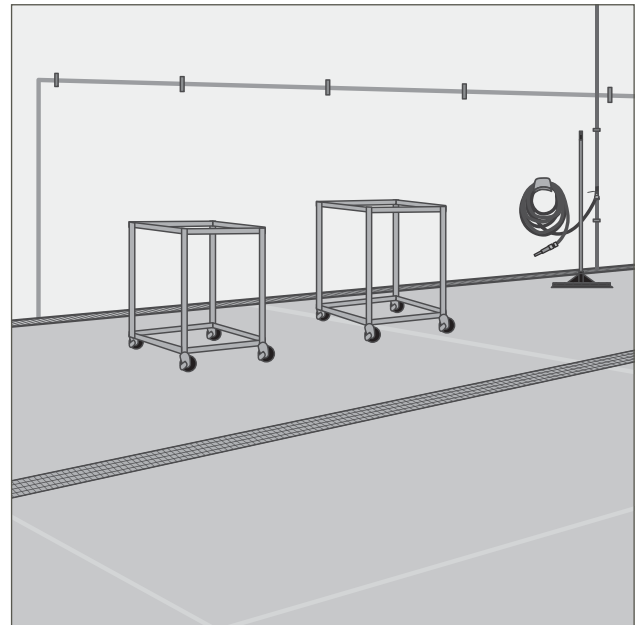


Figure 10: Effective workplace design to capture water run off, with in-built drains and floor bunding

Part 3 – Working with engineered stone

On-tool dust extraction

181. On-tool dust extraction removes dust as it is being produced by being fitted directly onto the tool. The system includes a captor hood or shroud, fitted over the dust generation point. The hood captures the dust as it is produced and transports it through a hose to an extraction unit.
182. On-tool extraction systems must be commercially available and connected to a Dust Class H vacuum or another system that captures any dust generated by the use of the power tool or mechanical plant.
OHS Regulations r319S(1)(b)

Dust Class H Vacuum means a vacuum that complies with the Class H requirements in AS/NZS 60335.2.69:2017 *Household and similar electrical appliances—Safety—Part 2.69: Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use or its equivalent.*
OHS Regulations r5

183. Tools fitted with extraction need to be set up with the captor hood as close as possible to the point where the dust is generated, to ensure as much dust as possible is captured.
184. Employers and self-employed persons should select on-tool dust extraction systems that are interlocked with tool activation (where available), so that when the tool is activated, extraction begins operating shortly before the tool can be used, and continues after the tool operation is complete.
185. The captor hood is an important part of the system and needs to be properly designed for the tool and tasks. The captor hood should sit as close as possible to the work surface when in use, to ensure all airborne dust created from the work process is captured.

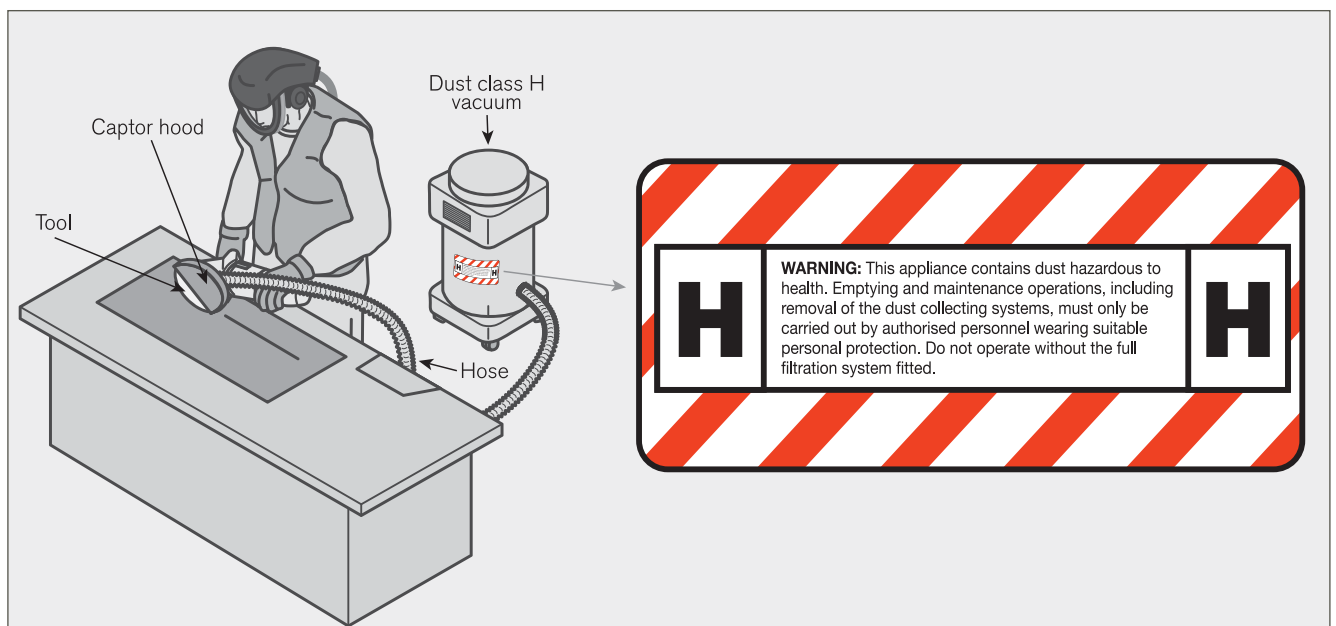


Figure 11: Grinder fitted with on-tool extraction

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186. Captor hoods are often manufactured as part of the power tool but may be retro-fitted to existing equipment. When retro-fitting dust extraction systems onto tools, employers and self-employed persons need to ensure the tool is appropriately designed to allow the system to work effectively. For example, sanding blocks or pads or grinding discs need to have enough holes to allow dust to be extracted through them.
187. When using on tool dust extraction while cutting and trimming engineered stone a sacrificial backer-board or spoil board may be used where the engineered stone slab can be lifted safely. This prevents dust from being released below the slab thereby increasing the effectiveness of on-tool dust extraction. MDF or particle board would be suitable for this purpose.

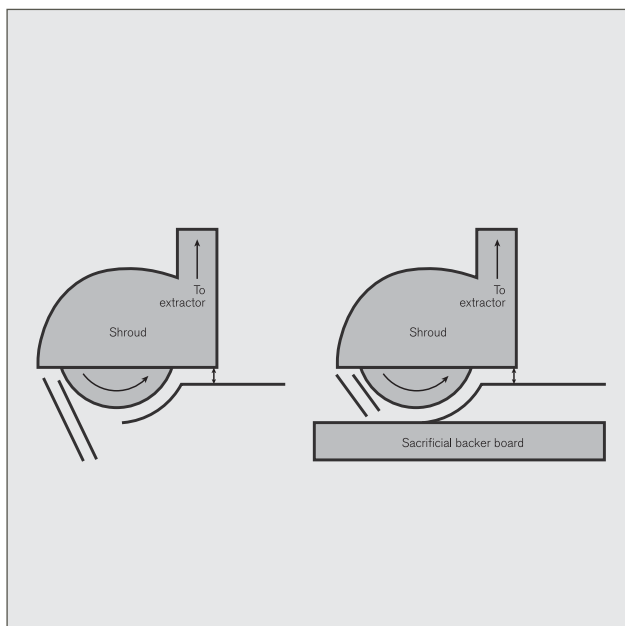


Figure 12: Use of a sacrificial board

188. Filters for Dust Class H vacuum cleaners (commonly referred to as Class H filters) need to conform to the requirements of AS 4260 *High efficiency particulate air (HEPA) filters – classification, construction and performance* or its equivalent. Filters need to be regularly checked and replaced, according to the manufacturer's instructions. Note HEPA does not mean H-class. Dust Class H-class vacuums/machines have features which improve safety when handling high hazard dusts including the safe removal of dust collection bags, an alarm indicator when the air flow falls below 20 metres per second, and the prevention of accidental entry and release of hazardous dust when not in use.
189. Waste captured by the extraction unit will need to be emptied regularly. Employers must ensure that when the unit is emptied, any risk of exposure to dust is controlled.
190. Employers have specific duties associated with the management of waste that contains hazardous substances, such as silica dust. For information about waste management, see *Managing waste contaminated by silica dust* below.
191. Silica dust is very abrasive to extraction equipment. On tool dust extraction systems must be used and maintained in accordance with regulation 319U (see paragraph 137). Employers need to ensure extraction systems are regularly inspected for damage.

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Local exhaust ventilation

192. Local exhaust ventilation must only be used with power tools or other mechanical plant used to undertake an engineered stone process if it is not reasonably practicable to use an appropriate integrated water delivery system or a commercially available on-tool dust extraction system. [OHS Regulations r319S\(1\)\(c\)](#)
193. Local exhaust ventilation is an engineering control that captures the emission of an airborne contaminant at its source and transports it to a safe emission point, filter or scrubber. [OHS Regulations r5](#)
194. Local exhaust ventilation systems such as hoods, booths or extraction walls extract airborne dust from processing areas. While these controls may reduce background levels of silica dust, they are not as effective as water suppression or on-tool dust extraction in reducing the exposure of employees and are generally not recommended.
195. If there is too much distance between an extraction unit and the dust generation point, the capture strength or velocity of extraction at the point of dust generation is too low to adequately capture all of the dust generated.
196. For extraction to be effective, the cutting point needs to be close to the extraction hood. The nature of the work may not allow this, or it may require the employee to constantly reposition the work piece or hood. For example, a stonemason cutting a sink hole into a benchtop is regularly moving and turning the tool, which generates dust in a range of directions and angles.

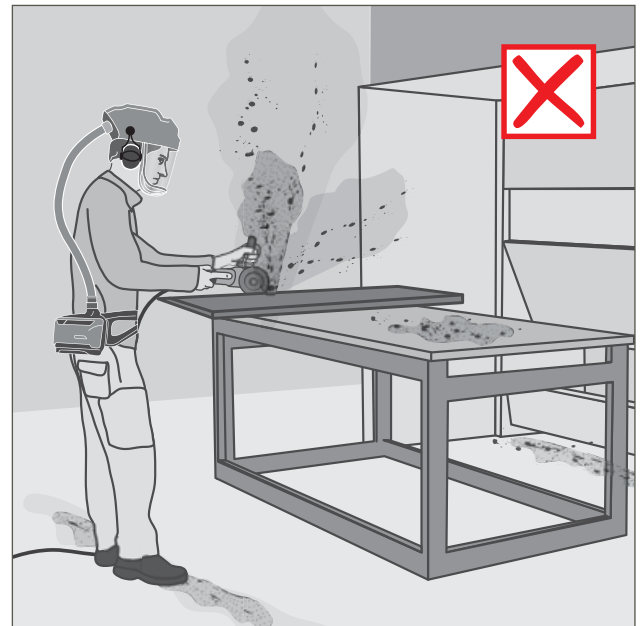


Figure 13: Dust not effectively captured by extraction wall

Administrative controls

197. If the risk has been reduced so far as is reasonably practicable using higher order controls (such as substitution, isolation and engineering controls) and a risk remains, an employer must reduce the remaining risk by using administrative controls, so far as is reasonably practicable. [OHS Regulations r163\(3\)](#)
198. Administrative controls involve using systems of work and procedures to reduce risk. When working with engineered stone, administrative controls must only be used to supplement higher order control measures.

Part 3 – Working with engineered stone

Workshop layout

199. The layout of engineered stone processing workshops needs to be designed to minimise exposure to and contamination from crystalline silica dust generated in neighbourhood work areas. For example, by including enough distance between work stations and positioning work areas for each stage of processing in sequence.

Work practices

200. The way in which work is conducted can affect the generation of silica dust and exposure of employees and others. The following work practices, among others, may assist in reducing the amount of exposure:

- planning to make the minimum number of cuts for each job
- using machinery and equipment that generates less dust, including routers, water jet cutters and edge or surface polishing machines
- implementing systems to ensure routine, or daily checks of critical controls, such as guards

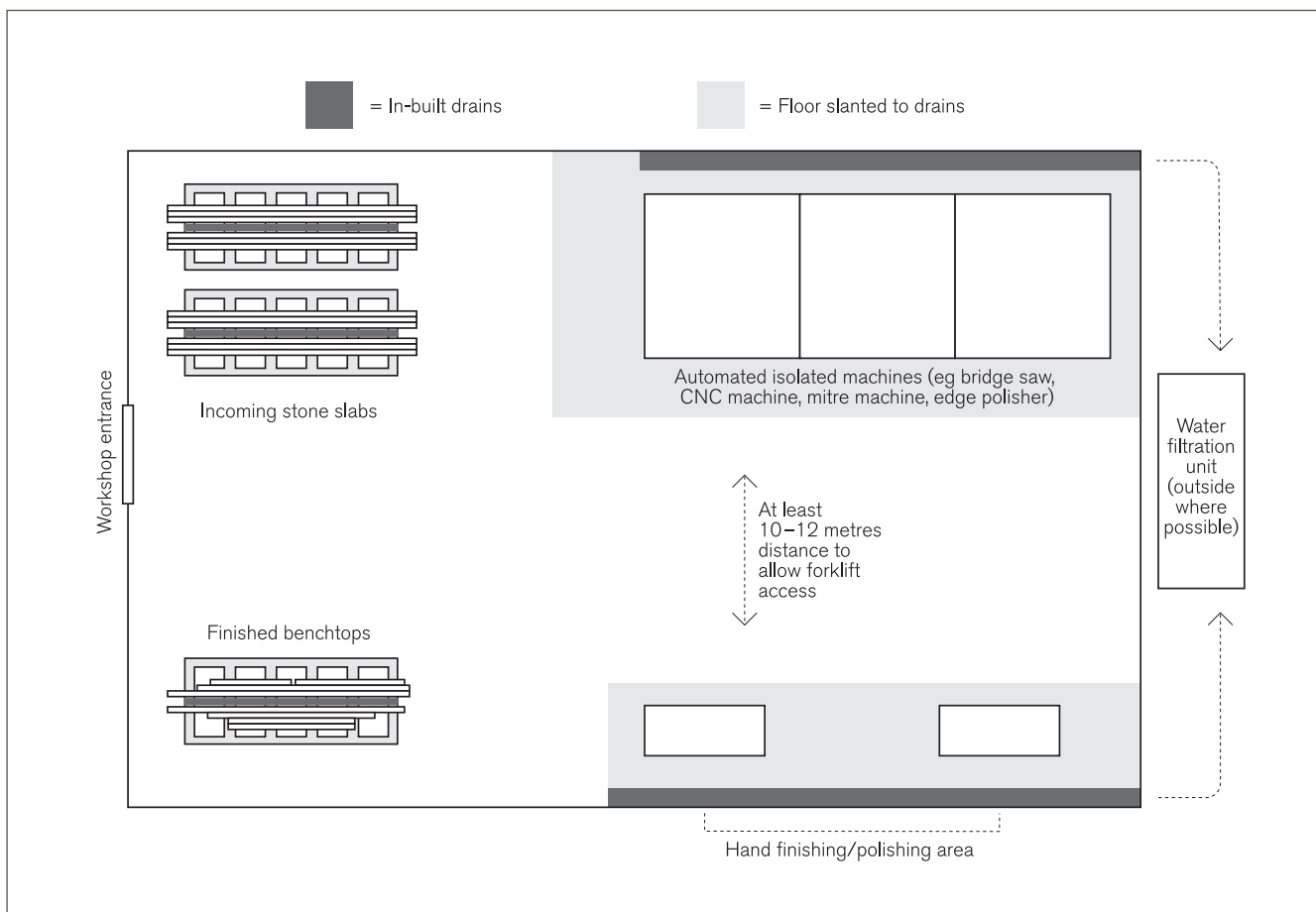


Figure 14: Effective workshop layout to minimise exposure

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- wetting slabs before cutting, grinding, or abrasive polishing to remove dust and aid water suppression
- washing slabs after fabrication to remove residual dust
- good housekeeping, including regular cleaning of work areas and equipment
- ensuring employees remove contaminated clothing before leaving the work area (for information about personal decontamination see paragraph 250).

201. In addition to safe work practices, warning signs need to be erected to clearly communicate silica dust hazards and required personal protection controls, such as RPE.

Information, instruction, training and supervision

202. Employers must provide employees with any necessary information, instruction, training or supervision required to enable them to perform their work in a way that is safe and without risks to health. This duty also extends to independent contractors (including any employees of the independent contractor) engaged by the employer in relation to matters over which the employer has control. OHS Act s21(2)(e)



Figure 15: Safety signage

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203. This would include matters such as:
- information, instruction and training in personal decontamination practices
 - housekeeping practices
 - waste management practices
 - maintenance of power tools and mechanical plant
 - emergency procedures, including any special decontamination procedures.
204. An employer must ensure that an employee who uses a power tool or other form of mechanical plant to undertake an engineered stone process is provided with information, instruction and training in:
- the use of that power tool or mechanical plant with an integrated water delivery system or an on tool dust extraction system or local exhaust ventilation [as outlined above], and
 - the use, fit, maintenance and storage of respiratory protective equipment. [OHS Regulations r319W](#)
205. An employer who is an engineered stone licence holder must ensure that employees who are likely to be exposed to risks associated with the undertaking of an engineered stone process are given information, instruction and training in:
- the health risks associated with exposure to crystalline silica dust, and
 - the need for, and proper use of, any risk control measures required under the OHS Regulations, and
 - how the risk control measures are to be implemented. [OHS Regulations r319ZC](#)
206. In providing adequate information, instruction and training, employers need to consider providing information about matters such as:
- the risk management process
 - information provided by the manufacturer or supplier about the engineered stone being used in the workplace
 - first aid and incident reporting procedures to be followed in case of injury or illness
 - the correct use of guarding.
207. The mix of information, instruction, training or supervision required will depend on the frequency and type of hazards in the workplace, and how much employees already know about the risks and necessary risk control measures.
208. Training programs need to be practical and 'hands on'. The structure, content and delivery of the training need to take into account any special requirements of the employees and independent contractors being trained. For example, information, instruction and training may need to be provided in a language other than English. Other considerations for how training is delivered include specific skills or experience, disability, literacy and age.

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209. Employers need to review their training programs regularly and also when:
- there is a change to work processes, plant or equipment
 - there is an incident
 - new control measures are implemented
 - there is a request by an HSR
 - changes are made to relevant legislation, or
 - any other issues arise which may impact on the way work is performed.
210. Employers should also keep records of induction and training given to employees.
211. Refresher training needs to be provided as appropriate for the workplace. The frequency of refresher training should be determined having regard to the complexity of the work, the skills required and the frequency with which the tasks or work is carried out.
212. An employer who is an engineered stone licence holder must ensure that an applicant who applies for employment with the employer at a workplace where an engineered stone process is undertaken is given information about:
- the health risks associated with exposure to crystalline silica dust, and
 - the need for, and details of, measures to control those risks.
- [OHS Regulations r319ZB](#)
213. The amount of information to be provided to job applicants relating to control measures does not need to be as extensive as the amount of information that must be provided to employees, but should include general details of the types of control measures that will be/are used to control risks in the particular workplace such as:
- the type of control measures used when cutting, grinding or abrasive polishing with a power tool or mechanical plant (eg an integrated water delivery system or on tool dust extraction system), and
 - the type of respiratory protective equipment that is used.
214. Employers must provide supervision to employees where such supervision is necessary to enable those employees to undertake their work safely. [OHS Act 21\(2\)\(e\)](#) For example, when engineered stone is being cut for the first time in a workplace by a new employee or with new machinery. This is particularly important with employees who are more vulnerable such as new, inexperienced or young employees.
215. Where employees undertaking the work are new and inexperienced, such as young workers, it is often necessary to provide additional supervision.

Part 3 – Working with engineered stone

Personal protective equipment

216. Personal protective equipment (PPE) such as safety footwear, gloves and hardhats is not sufficient of itself to control the risk of exposure to crystalline silica dust as a result of working with engineered stone. However, a risk assessment may determine that PPE is required, in addition to other control measures, to control other risks associated with the work being undertaken.
217. Any PPE that may become contaminated with crystalline silica dust needs to be cleaned regularly to ensure the dust is not transferred into other areas of the workplace. For more information about personal decontamination, see the Personal decontamination section in part 3.4 of this Code.

Respiratory protective equipment (RPE)

218. An employer must ensure that an employee who undertakes an engineered stone process is provided with respiratory protective equipment. [OHS Regulations r319V\(1\)](#)
219. When used in Part 4.5 and Subdivision 6 of Division 1 of Part 6.1 of the OHS Regulations, respiratory protective equipment means personal protective equipment that is:
 - designed to protect the wearer from the inhalation of airborne contaminants, and
 - complies with AS/NZS 1716 – *Respiratory protective devices*, or requirements equivalent to those of that Standard. [OHS Regulations r5](#)
220. The employer must also ensure that an employee uses the RPE provided to them. [OHS Regulations r319V\(2\)](#)
221. Employers need to provide an RPE program that includes:
 - the provision of suitable RPE for the task
 - fit testing
 - maintenance and repair procedures
 - a facial hair policy for respirators that rely on an effective seal around the face
 - facilities for appropriate storage.

Part 3 – Working with engineered stone

Selection of respiratory protective equipment

222. A person with the requisite knowledge, skills and experience needs to determine the most appropriate respirator for work involving engineered stone, following a risk assessment. This person needs to have knowledge of the risks to health from exposure to crystalline silica dust, the nature of the work to be performed and the risk control measures in place to control the risk. The person also needs to be familiar with the appropriate Australian Standards for RPE.
223. When choosing the most appropriate RPE, employers need to consider:
- whether it provides the required level of protection from the risks associated with the task
 - whether it is suitable for the wearer's size and build
 - whether the employee has facial hair
 - the wearer's need for mobility, dexterity, clear vision and communication.
224. Powered air purifying respirators (**PAPRs**) provide the highest level of protection and are more comfortable for wearing over longer periods. PAPRs work by using a fan to draw or push air in through the filter. This reduces the fatiguing effects that negative pressure respirators can have over a period of time, which require wearers to draw air through the filter.
225. Where an individual has a particular medical or respiratory condition that may be impacted by the use of a respirator, advice from a registered medical practitioner needs to be considered and this may result in a loose-fitting PAPR being recommended.
226. Respirators must comply with the requirements of AS/NZS 1716 *Respiratory protective devices* (or equivalent). Check the product information to make sure RPE is AS/NZS 1716 compliant. If you're not sure, ask your supplier or contact the manufacturer. Detailed guidance about RPE can also be found in AS/NZS 1715 *Selection, use and maintenance of respiratory protective equipment*.
227. The risks to health from exposure to crystalline silica dust must be assessed for any persons working adjacent to or visiting the processing area (such as administrative or sales employees) and appropriate control measures, such as providing RPE, need to be implemented. Procedures should be in place to minimise incidental access to the processing area when processing, cleaning or maintenance is occurring.

Part 3 – Working with engineered stone

Table 2: Recommended RPE for working with engineered stone

PAPR loose fitting helmet

High level of protection



- Positive pressure reduces fatigue
- Can be worn with facial hair
- Does not require fit testing

PAPR loose fitting hood

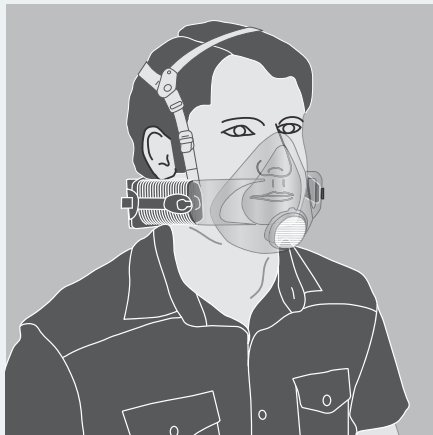
High level of protection



- Positive pressure reduces fatigue
- Can be worn with facial hair
- Does not require fit testing

Half face PAPR

Medium level of protection



- More comfortable over longer periods
- Positive air pressure reduces fatigue
- Cannot be worn with facial hair
- Requires fit testing
- Needs to be fit checked with each wear

Part 3 – Working with engineered stone

Table 2: Recommended RPE for working with engineered stone

Half face negative pressure respirator

Minimum level of protection



- Does not impair vision or mobility
- Cannot be worn with facial hair
- Requires fit testing
- Needs to be fit checked with each wear



Note: When undertaking an engineered stone process, filters used in respirators must be of a particulate type. When undertaking a gluing process, organic type filters may also be required.

Part 3 – Working with engineered stone

Fit testing of RPE

228. Fit testing measures the effectiveness of the seal between a respirator and the wearer's face. If there is not a good seal, contaminated air, including respirable crystalline silica, could leak into the respirator. Hood and helmet type respirators do not require fit testing as they cover the whole head and do not rely on a tight seal.
229. Fit testing ensures employees wear a respirator that is suitable to their individual facial characteristics. As these characteristics vary from person to person, it is unlikely that one model or size of RPE will fit everyone. Different sizes and models of respirators are available to accommodate these differences.
230. Facial hair, including beards, moustaches, sideburns and stubble impinging on the seal will stop a respirator from sealing properly. Respirable crystalline silica particles are much smaller than facial hair and will be able to leak into the respirator if it is not sealed completely.
231. Employees who are required to wear tight fitting respirators need to be clean shaven, or ensure there is no hair between their face and the seal of the respirator face piece. They also need to ensure facial hair, clothing or jewellery do not interfere with the respirator seal or inhalation/exhalation valve operation.
232. Fit testing needs to be carried out:
- by a competent person, manufacturer, supplier or consultant, who is properly trained and proficient in the fit testing method being used
 - before wearing a tight fitting respirator for the first time
 - when a new make or model of tight fitting respirator is issued
 - whenever there is a change in the employee's facial characteristics or features which may affect the facial seal (for example significant weight loss or gain)
 - on a regular basis as part of risk assessment and review of risk control measures.

Fit checking

For RPE that requires a facial seal, such as a half-face powered air purifying respirator, a fit check is a quick check to ensure it is properly positioned on the face when it is put on. Employees should do a fit check every time they put on their respirator in accordance with the manufacturer's instructions.

Part 3 – Working with engineered stone

Maintenance of RPE

233. RPE must be properly stored and regularly maintained, repaired or replaced to ensure it continues to be effective. Maintenance should be carried out by a competent person, in accordance with the manufacturer's instructions.
234. Particulate filters need to be replaced regularly. For example, as soon as any resistance is experienced, the filter should be replaced.
235. A maintenance program for RPE needs to include:
- daily cleaning and inspections for wear, damage and low or flat batteries (where batteries are being used)
 - appropriate storage (for example in a dry, clean and sealed container), with each employee provided with a dedicated container for their RPE
 - regularly replacing particulate filters
 - identification and repair or replacement of any worn or defective components of the equipment
 - maintenance and testing of RPE in accordance with the manufacturer's instructions
 - record keeping of any issues, training provided and fit testing details (including style, size, make and model for each employee)
 - maintenance records, including filter replacement and maintenance schedules
 - RPE program records, including procedures for use and audits or evaluations.

Note: Compressed air or other compressed gases **must not be used** to clean respirators worn by persons who have been in a work area where an engineered stone process has been undertaken unless the use of that air or gas does not result in a concentration of respirable crystalline silica that exceeds the exposure standard.

OHS Regulations r319X

Training on the use of RPE

236. The effectiveness of RPE as a control measure relies on its correct use and maintenance.
237. An employer must ensure that an employee who uses a power tool or other form of mechanical plant to undertake an engineered stone process is provided with information, instruction and training in the use, fit, maintenance and storage of RPE. OHS Regulations r319W(b)
238. An employer who is an engineered stone licence holder must ensure that employees who are likely to be exposed to risks associated with the undertaking of an engineered stone process are given information, instruction and training in:
- the health risks associated with exposure to crystalline silica dust, and
 - the need for, and proper use of, any risk control measures required under the OHS Regulations, and
 - how the risk control measures are to be implemented. OHS Regulations r319ZC
239. This would include information, instruction and training in the need for, and proper use of, RPE. Specifically, employees must be familiar with why RPE is required and how to use it correctly (including putting it on, taking it off and conducting a fit check).

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240. Training in RPE use and maintenance should be provided in accordance with AS/NZS 1715 *Selection use and maintenance of respiratory protective devices*.
241. Training needs to be provided by a competent person, and cover:
 - when RPE is required to be worn
 - how RPE works
 - the limitations of RPE
 - how to clean and maintain RPE
 - when and how to replace filters and batteries (including rechargeable batteries)
 - how and where to store RPE when it is not in use.

3.4 Clean up

Cleaning the work area

242. Employers need to ensure that the work area used for processing engineered stone is kept clean. For example, the area should be cleaned after each job is completed to ensure that there is no build-up of silica dust on plant, equipment, working surfaces, walls and the floor. RPE needs to be worn during clean-up activities.
243. Cleaning methods need to be carefully selected to ensure they do not have the potential to disturb or spread crystalline silica dust beyond the work area. For example, wet methods such as low pressure hosing, mopping, squeegeeing or wet wiping down surfaces will suppress any residual dust.
244. An employer or a self-employed person must not use or cause to be used compressed air or other compressed gases to clean a work area where an engineered stone process has been undertaken, unless the use of that air or gas does not result in a concentration of respirable crystalline silica that exceeds the exposure standard for respirable crystalline silica. [OHS Regulations r319X\(a\)](#)
245. Employers need to ensure that brooms, brushes and high-pressure water jets are not used in areas that may be dusty.
246. A Dust Class H vacuum cleaner is suitable for cleaning if the area is dry, but would likely be ineffective if the area is wet because the filter may become damaged. A household vacuum cleaner should not be used, even if it has a HEPA filter.

Part 3 – Working with engineered stone

247. Damp rags can be used to clean dusty surfaces or equipment that are hard to reach with a Dust Class H vacuum cleaner. Rags used to clean up silica dust are contaminated waste and need to be contained and disposed of as soon as possible, in a manner that eliminates the release of airborne respirable crystalline silica. Rags should not be re-soaked after they have been used as this will contaminate the water.
248. As part of decontamination, particular attention needs to be paid to walls, ledges, fittings and furnishings where silica dust may accumulate.

Wash down engineered stone slabs

Slabs of engineered stone are often supplied with a layer of dust, or are sent out for installation after processing without being washed down. To minimise the risk of exposure, stone slabs need to be washed prior to processing and again before sending out for installation.

249. At a minimum, cleaning of the work area needs to be conducted at the end of each day. To ensure good housekeeping practices:
- implement daily and thorough housekeeping and cleaning procedures for wet slurry and settled dust
 - use low pressure water, wet mopping with a squeegee or a Dust Class H vacuum cleaner to clean floors, walls and other surfaces
 - regularly clean vehicle track or high use areas and keep them wet during the day
 - prohibit the use of dry sweeping or compressed air or other compressed gases to clean surfaces, clothing or personal protective equipment, including respiratory protective equipment
 - provide low pressure water from hoses for cleaning between tasks.

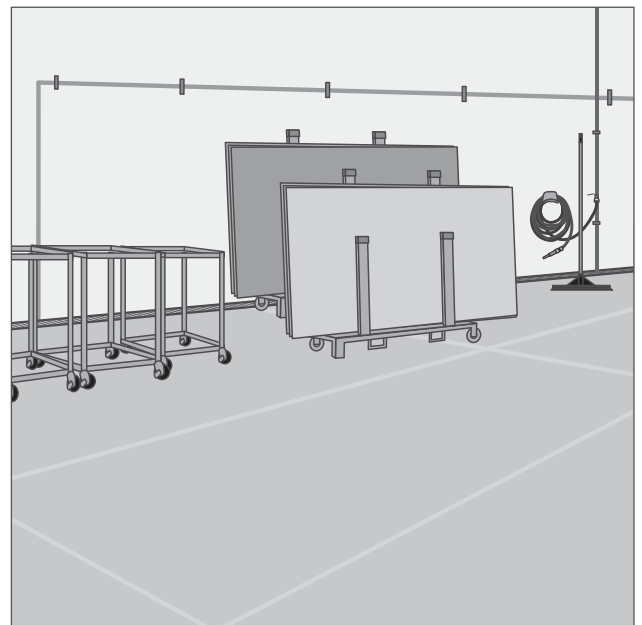


Figure 16: Good housekeeping

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Personal decontamination

250. Personal decontamination needs to be undertaken each time a person leaves the engineered stone processing area to ensure dust is not transferred to break rooms, other areas of the workplace or into the home.
251. At the exits of processing areas, employers need to provide:
 - Dust Class H vacuums for removing excess dust from clothing, including aprons, boots and any other PPE
 - running water for washing hands, face and hair
 - a low pressure hose or tray of water for cleaning the bottom of footwear.
252. An employer or a self-employed person must not use or cause to be used compressed air or other compressed gases to clean the clothing of a person who has been in a work area where an engineered stone process is being or has been undertaken, unless the use of that air or gas does not result in a concentration of respirable crystalline silica that exceeds the exposure standard for respirable crystalline silica. [OHS Regulations r319X\(b\)](#)
253. All PPE needs to be cleaned after each use to ensure dust does not accumulate. For example, by using a low pressure hose to spray down clothing, including aprons and boots.
254. Work clothes should not gather dust if exposure is appropriately controlled during processing work. However, if silica dust has settled on clothing, the contaminated clothing needs to be dampened, bagged, and labelled with 'Silica dust hazard'. Either launder on site or use a commercial laundry. Employers need to talk to the commercial laundry first about how they want to receive clothing.



Figure 17: Spray down with a low pressure hose to decontaminate PPE

Managing waste contaminated by silica dust

255. An employer must ensure that containers of waste produced or generated at a workplace from a hazardous substance, including silica dust, are identified. [OHS Regulations r161](#) The identification needs to reflect the nature of the waste as closely as possible, for example the label should identify the substance as 'Silica dust hazard'.
256. Waste contaminated by silica dust can include any disposable clothing or PPE, rags used to clean the work area or tools or equipment that cannot be decontaminated or are no longer required.
257. Employers need to have a waste management system in place that eliminates the risk of crystalline silica dust being released and becoming airborne.

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258. Bags used for containing waste need to be strong enough to ensure they will not tear and release dust. To minimise the risk of a bag tearing or splitting, bags should not be filled more than half full and excess air gently evacuated from the bag in a way that does not cause the release of dust.



Figure 18: Waste contaminated by silica dust needs to be bagged and labelled

Wet slurry

259. Wet slurry is the resultant waste from dust generating processes that are water suppressed. While it is wet, the slurry is not hazardous. If it is allowed to dry, some dust may be disturbed and become airborne. If there is any risk of exposure to dust for people who may handle the waste (eg employees, waste collectors or waste transfer station staff) the waste needs to be bagged and sealed before it is disposed.
260. Wet slurry needs to be managed to prevent dust from being released. This can be achieved by:
- capture or containment through floor bunding, grading, grates, curbing and channelling
 - keeping floors and surfaces wet
 - regular cleaning, including at the end of each day, to prevent wet slurry drying overnight
 - bagging and labelling waste and ensuring it is disposed of in accordance with waste disposal requirements.
261. Waste and debris in collection skips or bins should be regularly wetted down and/or covered.

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Recycled water

262. Recycled or recirculated water filtration systems used for water suppression need to be designed and installed by a competent person to ensure they effectively remove silica particles and prevent contaminated water continually passing through the system.
263. If an integrated water delivery system is used with a power tool or other form of mechanical plant when undertaking an engineered stone process, any recycled or recirculated water that is used in the system must be adequately treated.
[OHS Regulations r319S\(2\)\(b\)](#)
264. Water recycling systems can filter slurry so that crystalline silica and other dust particles are removed from the water before it is reused (see figure 19). These systems may include:
- a pit that collects slurry from drains AND
 - a slurry collection tank and filter press that compacts silica and other particles into a solid block for disposal (see method 1 in figure 19) OR
 - a slurry settlement tank and waste bag, where waste forms into a solid block (see method 2 in figure 19) OR
 - a bag dehydrator system that filters slurry through the filter bags, where the slurry is captured within the bags and the excess water is filtered (see method 3 in figure 19) AND
 - a filtered water tank that recirculates clean water back into the water supply.
265. Settling products, such as commercially available flocculants and/or coagulants, will consolidate crystalline silica particles in recycled water.
266. Water that is recycled needs to be visually assessed to ensure it is clear. If the water has a cloudy or milky appearance this means it is likely to contain a high concentration of respirable crystalline silica particles, and creates a risk that airborne particles will be released into the workplace.

Part 3 – Working with engineered stone

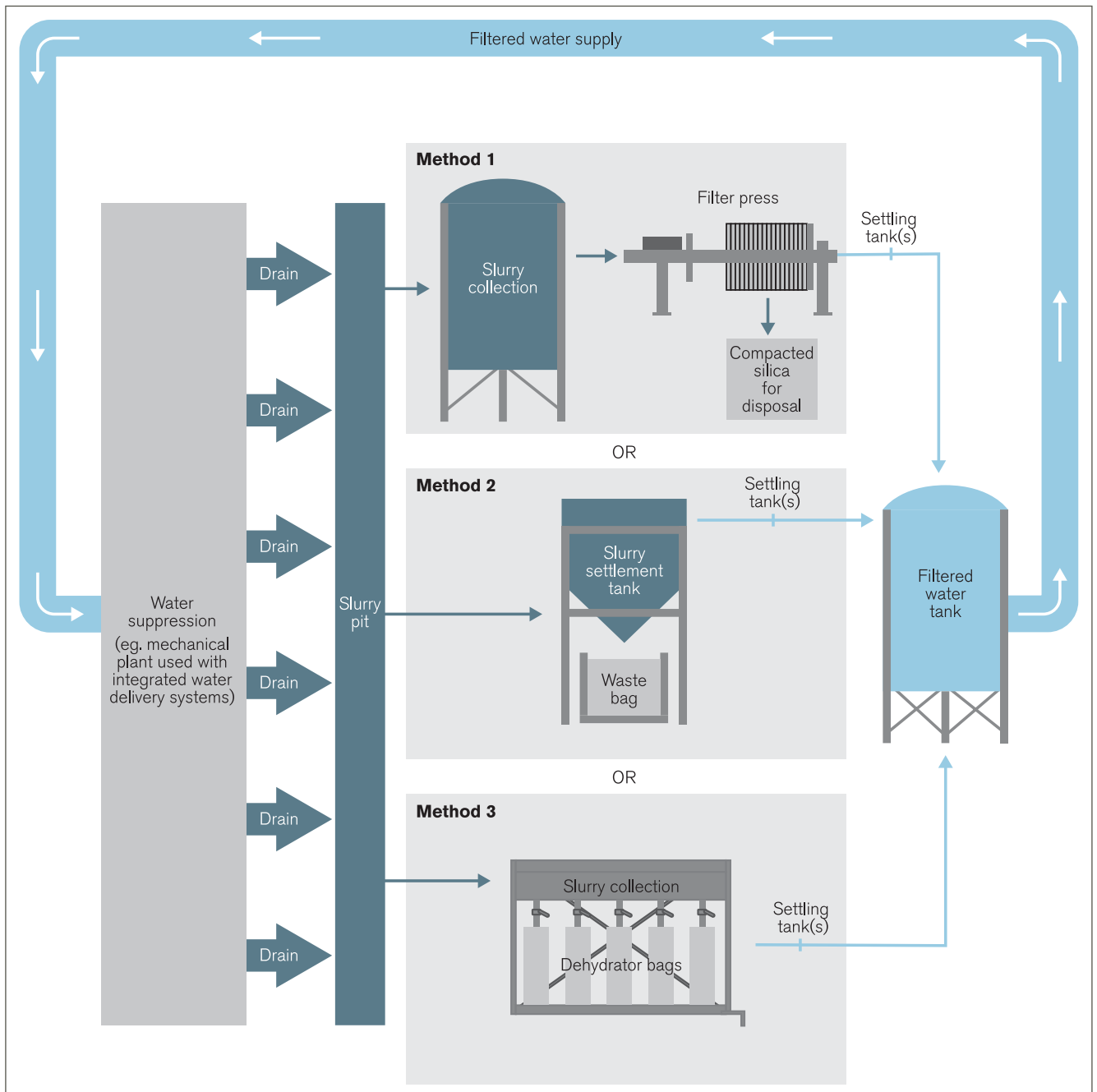


Figure 19: Water recycling systems

Part 3 – Working with engineered stone

3.5 Maintaining effective control measures

267. If an integrated water delivery system, on tool dust extraction system or local exhaust ventilation is used with a power tool or other form of mechanical plant when undertaking an engineered stone process (see Use of power tool or other form of mechanical plant to undertake an engineered stone process section in Part 3.3 of this Code), duties apply to employers and self-employed persons to ensure those controls are properly designed, installed, used and maintained.
268. An employer or a self-employed person must ensure that the system is designed and installed to, so far as is reasonably practicable, eliminate any risk of exposure to crystalline silica dust or if it is not reasonably practicable to eliminate the risk, reduce the risk so far as is reasonably practicable. **OHS Regulations r319T**
269. An employer or a self-employed person must ensure that the system is used and maintained in a manner that, so far as is reasonably practicable, eliminates any risk of exposure to crystalline silica dust or if it is not reasonably practicable to eliminate the risk, reduces the risk so far as is reasonably practicable. **OHS Regulations r319U**
270. Employers and self-employed persons need to have an ongoing maintenance procedure for all control measures used in the workplace, to ensure any defects are detected as early as possible. Inspections, maintenance and cleaning should be performed in accordance with the manufacturer's instructions.
271. The maintenance procedure needs to include:
- daily visual checks
 - frequent inspections of plant and equipment, performed at least once every three months
 - supervision to ensure risk controls that rely on human behaviour are being properly applied
 - testing of equipment
 - preventative maintenance of engineering controls (such as hand tools) and RPE
 - any necessary remedial work to ensure physical controls continue to operate effectively.
- For information about inspecting plant, see the Plant compliance code at **[worksafe.vic.gov.au](https://www.worksafe.vic.gov.au)**.
272. Integrated water delivery systems, on tool dust extraction systems or local exhaust ventilation need to be inspected regularly to confirm they are working effectively, for example by checking the water flow rate or extraction air flow. Inspections should also check for:
- wear and tear, corrosion or damaged parts
 - air leaks in pneumatic tools
 - kinks, holes or leaks in water suppression or dust extraction equipment
 - filters that need to be replaced
 - damage to guards and flaps that contain water spray.
273. Mechanical plant and power tools need to be regularly inspected, repaired or replaced when necessary, and any damaged or worn parts (such as grinding wheels) replaced.

Part 3 – Working with engineered stone

274. RPE must be used and maintained properly to ensure it continues to be effective. A maintenance program should include procedures for daily cleaning and inspection of RPE for wear and damage, and identification and repair or replacement of any worn or defective components. For more information about maintaining RPE see the Maintenance of RPE section from paragraph 233.
275. Employers should keep a record of any inspections and maintenance carried out. These records should:
- be kept for the life of each item of plant or equipment
 - be in a clear format that can be readily accessed
 - provide a clear understanding of what has taken place in relation to inspection and maintenance activities.
- ### Review and revision of risk controls
276. An engineered stone licence holder must review and, if necessary, revise an ESCP if there is an indication that risk control measures are not controlling the risks adequately, including after any incident that occurs while working with engineered stone. [OHS Regulations r319ZF\(4\)](#)
277. Employers must also review risk controls to make sure they are working as planned, and revise them if necessary in the following circumstances:
- before any alteration is made to a system of work that is likely to result in changes to risk associated with the use of hazardous substances (including exposure to crystalline silica dust from working with engineered stone), for example where the concentration of respirable crystalline silica in the workplace is increased
 - if advice is received from a registered medical practitioner that adverse health effects have been identified by health monitoring
 - following a notifiable incident involving a hazardous substance, for example an incident that results in a person requiring medical treatment within 48 hours of exposure to a substance, or injury requiring immediate inpatient treatment in a hospital (for more information, see [worksafe.vic.gov.au/report-incident-criteria-notifiable-incidents](https://www.worksafe.vic.gov.au/report-incident-criteria-notifiable-incidents))
 - if, for any other reason, the risk control measures do not adequately control the risks, or
 - after receiving a request from an HSR. An HSR can make a request if they believe, on reasonable grounds, that:
 - any of the circumstances listed above exist, or
 - the employer has failed to properly review the risk controls, or
 - in conducting a review of or revising the risk controls, the employer has failed to take into account any of the circumstances listed above (eg the HSR believes that the employer has failed to consider changes to risk associated with a change to a work system during their review of risk controls). [OHS Regulations r164](#)
278. Employers can review the effectiveness of risk controls by, for example, conducting regular safety inspections and asking for feedback from employees utilising the risk controls. Employers must consult with employees and HSRs (if applicable), so far as is reasonably practicable, on certain matters related to health or safety that directly affect or are likely to directly affect them. For more information, see the Consultation section in Part 1 of this Code.

Part 4 – Health monitoring

279. Health monitoring is the process of monitoring a person to identify changes in the person's health status and may include audiometric testing, medical examinations (including audiological examinations) and biological monitoring. [OHS Regulations r5](#)
280. Health monitoring for exposure to crystalline silica primarily screens for silicosis, however, there are other conditions associated with exposure including chronic obstructive pulmonary disease, autoimmune disease and kidney disease.
281. High exposure work, such as kitchen benchtop fabrication, can lead to serious and potentially life threatening health conditions. In many cases, employees with silicosis do not experience any symptoms until the disease is advanced. Early identification and treatment of respiratory disease, including silicosis, can improve health outcomes.
282. An employer who is an engineered stone licence holder who is required under regulation 169 to ensure health monitoring is carried out for an employee must ensure that:
- health monitoring is carried out under the supervision of a specialist occupational and environmental physician, or a specialist respiratory and sleep medicine physician [OHS Regulations r319ZD](#)
 - the registered medical practitioner prepares a health monitoring report in accordance with the OHS Regulations and a copy of the report is given to the employer [OHS Regulations r169\(2\)\(b\)](#)
 - a copy of the report is provided to WorkSafe within 30 days of being received. [OHS Regulations r319ZE\(1\)\(a\)](#) (See Health monitoring report section from paragraph 306 for details about how to provide reports)
283. Employers have an obligation to provide their employees with information about the purpose, and the type or nature, of the health monitoring being provided. [OHS Regulations r19\(2\)](#) The health monitoring is to be undertaken at the employer's expense. [OHS Regulations 19\(3\)](#)

Part 4 – Health monitoring

When health monitoring is required

284. An employer must, so far as is reasonably practicable, monitor the health of employees. [OHS Act s 22](#)
285. In workplaces where employees are exposed to crystalline silica, employers must ensure that health monitoring is carried out where the exposure of the employee is reasonably likely to have an adverse effect on the employee's health under the particular conditions at the workplace. [OHS Regulations r169](#)
286. Due to the silica content of engineered stone, it is recommended that employers ensure health monitoring is carried out for all employees who work in the vicinity of engineered stone processes. In addition to employees directly involved in undertaking engineered stone processes, this would include other employees such as supervisors, labourers, forklift operators, cleaning and maintenance staff, office and sales staff.
287. Health monitoring needs to be provided when an employee commences employment with a new employer, before they start work, to establish a baseline from which changes in their health status can be identified. A specialist medical practitioner, in consultation with the employer and employee, may advise that baseline monitoring is unnecessary if results from previous health monitoring undertaken within the last six months are available, and the health monitoring report is provided to the new employer.
288. Ongoing monitoring needs to be undertaken regularly while the employee remains in the job. The frequency of regular monitoring will be determined by the specialist registered medical practitioner.
289. A final monitoring session needs to be undertaken when the employee finishes working for the employer, unless health monitoring was undertaken within the last six months and the results of any tests that were undertaken are available.
290. When an employee ceases employment, an employer who is an engineered stone licence holder must provide the employee with a written statement that states the period during which the employee worked with engineered stone and a statement advising the employee to have periodical health assessments, including details of the types of tests that are relevant. [OHS Regulations r319ZG](#)

Part 4 – Health monitoring

What health monitoring involves

291. The types of medical tests required for employees who have been exposed to crystalline silica can vary according to their medical and family history, the period over which the exposure has occurred and the level of exposure. These factors will be assessed by the specialist registered medical practitioner supervising the health monitoring, who will determine which tests are required.
292. Health monitoring for exposure to crystalline silica may involve:
- biological monitoring
 - collection of demographic data (for example age, gender)
 - a review of work and medical histories
 - a review of workplace exposure, including atmospheric monitoring data (where available)
 - physical examination with emphasis on the respiratory system
 - blood tests
 - lung function testing (spirometry and gas transfer tests)
 - chest x-rays and/or CT scans.

Best practice health monitoring for crystalline silica exposure

Best practice for the types of tests that may be used for health monitoring is developing, so the advice from your specialist medical practitioner may differ to the guidance in this code. For more information on the recommended tests go to the WorkSafe website at worksafe.vic.gov.au.

Suitable medical practitioners

293. Employers must ensure that health monitoring is carried out under the supervision of a registered medical practitioner. [OHS Regulations r169\(2\)\(a\)](#)
294. An employer who is an engineered stone licence holder who is required under regulation 169 to ensure health monitoring is carried out for an employee must ensure that the health monitoring is carried out under the supervision of a specialist medical practitioner, specifically:
- an occupational and environmental physician, or
 - a specialist respiratory and sleep medicine physician [OHS Regulations r319ZD](#)
295. A specialist occupational and environmental physician means a person who is registered under the Health Practitioner Regulation National Law as a medical practitioner (other than as a student) in the specialty of occupational and environmental medicine. [OHS Regulations r319ZD\(2\)](#)
296. A specialist respiratory and sleep medicine physician means a person who is registered under the Health Practitioner Regulation National Law as a medical practitioner (other than as a student) in the specialty of physician in the field of specialty practice of respiratory and sleep medicine. [OHS Regulations r319ZD\(2\)](#)
297. A list of specialist occupational and environmental physicians can be found on the Royal Australasian College of Physicians website at racp.edu.au/about/college-structure/australasian-faculty-of-occupational-and-environmental-medicine/find-a-consultant. Employers should speak to the specialist medical practitioner to ensure they have experience with silicosis and other silica dust diseases.

Part 4 – Health monitoring

298. An employer must, so far as is reasonably practicable, consult with employees who are or are likely to be directly affected when making decisions about the procedures for monitoring the health of employees at the workplace. **OHS Regulations 35(1)(d)** If the employees are represented by a HSR, the consultation must involve that representative (with or without the involvement of the employees directly). **OHS Regulations 35(4)**
299. Information provided to the specialist medical practitioner needs to include:
- the name and address of the business
 - the name and date of birth of the employee
 - a description of any of the employee's tasks that relate to crystalline silica
 - how long the employee has been doing the work
 - atmospheric monitoring data from the workplace (where available)
 - any previous health monitoring reports relating to the employee's exposure to crystalline silica.
- ## Refusal to participate in health monitoring
300. While at work, employees must take reasonable care for their own health and safety, and cooperate with any actions their employer takes in order to comply with the OHS Act and OHS Regulations. **OHS Act s25**
301. Employers should encourage employees to participate in health monitoring, as early detection and treatment can prevent serious and life-threatening conditions from developing.
302. Employers should support employees in these circumstances by:
- ensuring they understand how health monitoring will benefit them
 - making the process easy to follow
 - making sure interpreters are available to assist employees where necessary
 - reminding employees that their workplace, family and community want them to be as safe and healthy as possible
 - ensuring HSRs (if any) are involved in supporting the health monitoring process and encouraging employees to participate.
303. If employees are still not willing to participate, employers can request WorkSafe to attend the workplace and speak with their employees about the importance of health monitoring. Employers can also arrange for a medical practitioner to speak to employees about their concerns.
304. Employers should have procedures in place for managing health and safety issues, including when employees refuse to participate in health monitoring. These procedures must be developed in consultation with employees and HSRs (if any), and made known to all employees prior to commencing work with engineered stone.
305. The responsibility to ensure that health monitoring is carried out for an employee (where required) lies with the employer. If the steps above are taken and still do not result in employees agreeing to take part in health monitoring, employers must first consider any agreed procedures to resolve health and safety issues at the workplace.

Part 4 – Health monitoring

Health monitoring report

306. The employer must ensure that a health monitoring report is prepared by the medical practitioner and a copy of the report is given to the employer. **OHS Regulations r169(2)(b)** A template of the Hazardous substances health monitoring report can be found at **[worksafe.vic.gov.au/resources/hazardous-substance-health-monitoring-report](https://www.worksafe.vic.gov.au/resources/hazardous-substance-health-monitoring-report)**.
307. Employers must ensure the health monitoring report includes:
- any indications of adverse health effects that may be attributed to crystalline silica exposure
 - any recommendations on measures the employer should take to ensure that the employee is not exposed to crystalline silica for a specified period
 - an interpretation of the results of the health monitoring, including a statement of the medical practitioner's opinion as to whether the employee should continue working with crystalline silica. **OHS Regulations r169(2)(c)**
308. The employer must provide a copy of the report or summary of the results of the report to:
- the person to whom the report or summary relates as soon as reasonably possible after the employer receives the report or summary
 - if the person to whom the report or summary relates authorises in writing a third party to have access to the report or summary, that third party
 - a WorkSafe inspector who requests a copy of the report or summary. **OHS Regulations r20(2)**
309. An employer who is an engineered stone licence holder must provide a copy of any health monitoring report to WorkSafe within 30 days of the report being received by the licence holder. **OHS Regulations r319ZE(1)(a)** For more information about how to provide health monitoring reports to WorkSafe, go to the WorkSafe website at **[worksafe.vic.gov.au/crystalline-silica](https://www.worksafe.vic.gov.au/crystalline-silica)**.
310. An engineered stone licence holder is not required to provide a health monitoring report under regulation 170 if they have already provided that report under regulation 319ZE(1)(a). **OHS Regulations r319ZE(2)**
311. An employer must allow HSRs of a designated work group access to information that the employer has relating to the health and safety of the members of the designated work group including access to relevant medical information relating to an employee's health and safety that does not identify individual employees and, with the consent of an employee, medical information that identifies that employee. **OHS Act s69 and OHS Regulations r20**
312. An employer must ensure that any report resulting from the medical examination or other health monitoring of a person required under the OHS Regulations, and any summary of the results of such a report, is otherwise kept confidential. **OHS Regulations r20(1)**

Part 4 – Health monitoring

313. If the specialist medical practitioner advises that adverse health effects have been identified by the health monitoring, employers must review, and if necessary, revise any measures implemented to control the risks associated with employees' exposure to crystalline silica at the workplace. OHS Regulations r164(1)(b) For information about the review and revision of risk controls, see Review and revision of risk controls section in Part 3.5 of this Code.
314. Employers must keep any health monitoring reports they are given for 30 years. OHS Regulations r171

Employees should obtain a copy of detailed test results

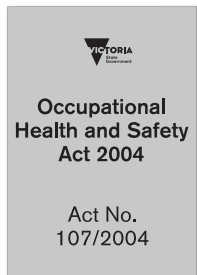
It is recommended that employees are provided with a copy of the detailed assessment and results of any testing undertaken as part of their health monitoring. This will be useful information to bring to appointments with GPs or other medical practitioners.

Employees should request a copy of the results directly from the specialist medical practitioner supervising the health monitoring.

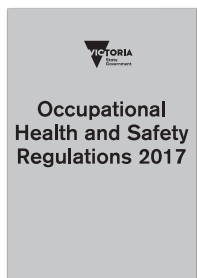
Removing an employee from exposure

315. If the health monitoring report recommends that an employee is to be removed from work that involves exposure to crystalline silica, employers need to action this straight away. For example, by transferring the employee to other work or a location where there is no risk of exposure.
316. In addition to removal from exposure to crystalline silica, employees may need to be removed from exposure to other potentially hazardous dusts, fumes or vapours if recommended by the specialist medical practitioner.
317. The employer should discuss any recommendations with the specialist medical practitioner to clarify any uncertainties.
318. Employers must consult with the employee when making decisions about how to control the risk to the employee's health and safety. This might include transferring the employee to other work or a location where there is no risk of exposure to crystalline silica until cleared to do so by the specialist medical practitioner.
319. Employers need to continue to provide employees who have been removed from work or transferred to other work with information about their health monitoring.
320. Employees who have been diagnosed with a silica-related disease may be entitled to workers compensation. For more information about how to make a claim go to the WorkSafe website at worksafe.vic.gov.au.

Appendix A – The compliance framework



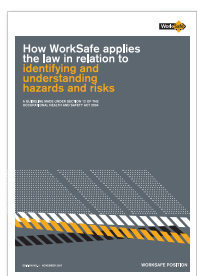
The Occupational Health and Safety Act 2004 (OHS Act) sets out the key principles, duties and rights in relation to occupational health and safety.



The Occupational Health and Safety Regulations 2017 (OHS Regulations) specify the way in which a duty imposed by the OHS Act must be performed, or prescribe procedural or administrative matters to support the OHS Act (eg requiring licences for specific activities, the keeping of records or giving notice).



Compliance codes provide practical guidance to duty holders. If a person complies with a provision of a compliance code, they are deemed to comply with the OHS legislative duty covered by the code provision. However, compliance codes are not mandatory, and a duty holder may choose to use some other way to achieve compliance.



WorkSafe positions are guidelines made under section 12 of the OHS Act that state how WorkSafe will apply the OHS Act or OHS Regulations or exercise discretion under a provision of the OHS Act or OHS Regulations. WorkSafe positions are intended to provide certainty to duty holders and other affected parties.



Non-statutory guidance includes information published by WorkSafe aimed at building people's knowledge and awareness of OHS issues, risks to health and safety, and the disciplines and techniques that can be applied to manage and control risks. Non-statutory guidance is not mandatory, nor does it provide any *deemed to comply* outcomes for duty holders. This guidance does, however, form part of the *state of knowledge* about OHS.

Appendix B – References

The references listed below are not incorporated into this compliance code. This means that they do not form part of this compliance code, although they may have regulatory status in their own right. They are included only to provide an indication of sources of further information.

Australian Standards

- AS/NZS 1716 *Respiratory protective devices*
- AS/NZS 1715 *Selection, use and maintenance of respiratory protective equipment*
- AS 2985 *Workplace atmospheres – Method for sampling and gravimetric determination of respirable dust*
- AS/NZS 60335.2.69 *Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use*

National guidance

- Safe Work Australia: Managing the risks of respirable crystalline silica from engineered stone in the workplace: Code of Practice
- Safe Work Australia: Workplace exposure standards for airborne contaminants
- Safe Work Australia: Health monitoring for exposure to hazardous chemicals – Guide for medical practitioners
- Safe Work Australia: Health monitoring for exposure to hazardous chemicals – Guide for workers
- Safe Work Australia: Crystalline silica health monitoring
- Safe Work Australia: Working with silica and silica containing products

Professional associations

- Australian Institute of Occupational Hygienists: **aioh.org.au**
- Australasian Faculty of Occupational and Environmental Medicine: **racp.edu.au**
- National Association of Testing Authorities: **nata.com.au**

Appendix C – Silica containing products

Material	% silica content
Engineered stone	40 to 95%+
Sandstone	70% to 90%
Granite	25% to 60%
Slate	20% to 40%
Porcelain	14% to 18%
Marble	Less than 5%

+ = Under the OHS Regulations engineered stone is defined as a manufactured composite stone material that contains resins and has a crystalline silica content of 40 per cent or greater. Engineered stone is also known as reconstituted, artificial or manufactured stone and quartz conglomerate.

Note: High levels of crystalline silica may also be found in some natural stone products. To find out how much, or which form of, crystalline silica is in a product, refer to the safety data sheet (SDS) or product information from the manufacturer or supplier.



WorkSafe Agents

Agent contact details are all available at
worksafe.vic.gov.au/agents

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Information in your language

For information about WorkSafe in your own language, call our Translating and Interpreting Service (TIS National) on **131 450**.