

# Managing silica dust at construction sites

**Guidance Note** 



WorkSafe Tasmania Department of Justice This guide is not legal advice. You should read it along with the Work Health and Safety Act 2012, the Work Health and Safety Regulations 2022, and any other laws or Codes of Practice that apply. You can find these documents on the WorkSafe Tasmania website: www.worksafe.tas.gov.au

These laws use the term 'Person Conducting a Business or Undertaking' or 'PCBU' instead of 'employer'.

We welcome your feedback on this guide. Please email your comments to: <u>wstinfo@justice.tas.gov.au.</u>

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## **Overview of this guidance note**



Silica dust exposure is life-threatening. Exposure is preventable. Keep your workers safe by taking the right safety measures.

This guidance note aims to help Persons Conducting a Business or Undertaking (PCBUs) in the residential and commercial construction industry who work with materials that contain silica.

It explains:

- the hazards and risks of breathing in silica dust (also known as crystalline silica)
- how to control the risks of working with silica-containing materials that can make silica dust when you work with them
- how to make sure your workplace is safe when working with silica-containing materials.



## Understanding silica dust

Silica is a type of natural, mineral crystal made of silicon dioxide that is found in rocks, stones, sand, gravel and clay. The most common kind is called quartz, which is often used in engineered stone benchtops.

Silica-containing materials consist of tiny particles, which can get into the air when disturbed. Disturbance can be caused by working with them such as when cutting, grinding or polishing a material, like in the photo here.

Silica can be found in the materials listed in this table:



Image 1: Worker cutting engineered stone.

Material containing silica	% of crystalline silica
Sand	Over 95%
Engineered stone products	Up to 92%
Sandstone	70 to 90%
Granite	25 to 60%
Ceramic tiles	5 to 45%
Autoclaved aerated concrete panels, concrete bricks and pavers	20 to 40%
Slate	20 to 40%
Fibre-cement sheeting	5 to 40%
Concrete	Up to 30%
Bricks	5 to 15%
Marble	Up to 5%



Regardless of the percentage of silica, the PCBU must implement controls to manage the risks of exposure to silica dust.

#### Table 1: Materials with silica content

When workers disturb these materials, tiny particles called silica dust, 100 times smaller than a grain of sand, are released into the air. The air can retain these particles for a long time and workers can breathe them in without realising it. Image 2 below shows the comparison of dust particle sizes with human hair.



Breathing in silica dust is dangerous. It can harm your lungs, making them scarred and hard for you to breathe. Breathing in silica dust can lead to:



**Silicosis** (when your lungs become scarred, and they do not recover)



**Emphysema** (when the little air sacs in your lungs weaken, and it's hard to breathe)



Kidney damage (when your kidneys don't function well and can't filter your blood like they should)



**Chronic bronchitis** (when the big airways in your lungs become inflamed)



**Lung cancer** (when cancerous cells grow in your lungs)



Autoimmune disease (when your body's immune system, which is supposed to keep you healthy starts attacking your organs and tissues)

Health professionals know that breathing in low levels of silica dust for a long time can lead to disease. Now, they also know that even brief exposure can be dangerous. Silica disease doesn't show immediate symptoms when you inhale it, but the harm has already begun.



Make sure your workers avoid breathing in silica dust by putting the right controls in place.



The amount of silica in a material and the time spent exposed to airborne silica dust determine how significant or high the risk is to a worker's health.

Significant risk = air monitoring shows more than the standard of an eight-hour, time-weighted average (TWA) of 0.05 milligrams per cubic metre (mg/m3).

Air monitoring will determine exposure levels and guide which control measures to put in place.



## Identifying risk and exposure

Workers who use power tools or machines on rocks, stones, and other materials containing silica are the ones most likely to breathe in silica dust. This includes workers who:

- cut, drill, saw, rip up, or chase into bitumen, concrete and brickwork
- angle grind, jackhammer, scabble, chisel or spray (shotcrete) concrete
- mix cement, mortar, floor ardit or plaster
- cut in or chase new services into concrete slabs or walls
- dig out sites or demolish buildings with silica-containing stone, sandstone, clay or granite
- blast, dig out, drill, cut, or tunnel into sandstone, clay or granite
- use a power tool to cut or change engineered stone
- cut, grind, or drill bricks, autoclaved aerated concrete, pavers or tiles
- pull apart equipment or get rid of offcuts covered in silica dust
- do cleaning jobs like dry sweeping, changing filters or dust collection bags
- remove work clothes and personal protective equipment (PPE) after working with silica-containing materials
- working near other workers doing these tasks.

Make sure you know the types of materials that are at your site by:

- referring to a Safety Data Sheet (SDS) for the materials you work with and see if the components listed include quartz, cristobalite or crystalline silica
- finding out from the manufacturer or supplier if the material contains silica. You can also look at the manufacturer's website, product information sheet, or product warning label like the to the right
- checking if there is a silica dust hazard sign at your site, like the one shown on this page
- getting help from occupational hygienists to find possible sources of silica dust at work.

Image 3: Silica dust hazard sign and product warning label.





## Risk management strategies

Remove silica dust if you can. If you can't, protect your workers from breathing it in. This is important even for short tasks.

The work health and safety laws say you must:

- check how much silica dust there is at your site and how it can harm your workers
- have a plan to keep your workers safe and healthy
- be ready to deal with any problems caused by silica dust
- keep a record of safety implementation plans and actions.

You must train and supervise your workers to work safely with materials containing silica. This includes independent contractors and other people who might breathe in silica dust.

They need to know:

- how silica dust can harm them and their co-workers
- what you are doing to stop or reduce the dust
- how to wear and use their PPE gear, especially respiratory protection
- how their health will be checked and reported on.

#### Implementing the hierarchy of controls

Using the hierarchy of controls can effectively reduce the risk of silica dust exposure.

The best approach for the most protection is using a combination of controls, such as the I-SEE mix of control methods.



Wet methods, on-tool extraction systems or LEV systems should be used following the code of practice for Managing the Risks of Respirable Crystalline Silica from Engineered Stone in the Workplace.

Image 4 below shows what type of controls are used, from the most effective through to the least effective methods.



Most effective

Image 4: Hierarchy of Controls. This image has been used with permission from Lung Foundation Australia.

#### Control 1: Elimination: physically remove the hazard

• Avoid using materials that contain silica.

#### **Control 2: Substitution: use a safer alternative**

- Choose materials with a lower silica content.
- Use shears instead of circular saws.
- Isolate tasks that make silica dust by:

#### Control 3: Isolation: separate people from the hazard

- Use automated machines inside an enclosed space.
- Use fully enclosed operator cabins.
- Provide a safe distance between the workers and the source of the silica dust or remove the hazard.

#### **Control 4: Engineering controls: redesign tasks or modify equipment**

Engineering controls involve changing the way tasks are done by using additional mechanical devices or processes to minimise or remove the release of silica dust into the air. Your choice of engineering controls depends on the type of tasks, and it must include one of the following actions numbered 2-4:

- 1. Automation: Using automated tools such as a computer numerical control (CNC) machine.
- 2. Water suppression: Using a system that puts water on the place where the silica dust comes from to stop the dust from going into the air. You should manage the water runoff well so that the silica dust does not go into the air when it dries.
- 3. On-tool dust extraction: Using a device that extracts silica dust at the point of generation. This system typically includes a captor hood or shroud fitted over the dust generation point, joined to an extraction unit with trade Class M vacuum cleaners with HEPA filter or Class H vacuum cleaners with HEPA filter for engineered stone dust.
- 4. Local exhaust ventilation: Using hoods, booths, or walls that remove the airborne silica dust when you make it and let it out at a safe place, filter or scrubber. While fans can lower silica dust levels by removing the air, water can stop the dust, and on-tool extraction can provide better protection for workers.

#### **Control 5: Administration controls: implement training and procedures**

Administrative controls offer more protection after substituting, isolating and engineering controls are in place. To influence worker behaviour, these controls require procedures and training in the workplace.

Safe work procedures tell workers how to behave and work to lower silica dust exposure. These procedures might include:

- rotating shifts and limiting task times to cut each worker's silica dust exposure
- following the manufacturer's instructions for equipment maintenance and filter changes
- putting up warning signs that show the dangers of silica dust clearly
- putting up signs like the one below that tell workers to use the control measures they need to lessen airborne silica dust exposure
- · decontaminating dusty clothing and respiratory protective equipment during and after work tasks
- keeping the workplace clean by wet sweeping, wet wiping, and mopping, and using industrial H or M-class vacuum cleaners with HEPA filters
- giving workers dust-free areas for breaks, eating and drinking
- making sure workers are clean-shaven
- using Safe Work Method Statements (SWMS) for certain high-risk work activities.



Image 5: Sign that instructs workers to use the control measure of wet sweeping when cleaning up silica dust. Make the workplace safer by keeping silica dust away from other areas. You can do this by putting some space and barriers between the places where you work with silica. Working outside or in well-ventilated spaces can also help. Only let workers who need to work with silica enter the areas where silica dust is present.

#### Safe work method statements (SWMSs)

A safe work method statement (SWMS) is a document that helps you to:

- find out what hazards you might face from silica dust
- understand the health and safety risks of silica dust
- explain how you will manage the risk of exposure to silica dust, including:
  - » what controls you will use to reduce silica dust exposure
  - » how you will use the controls properly
  - » tell your workers how to stay safe and healthy when working with silica dust.

You can find more information in the Construction Work code of practice. Go to <u>www.worksafe.tas.gov.au</u> and search for 'codes'.

#### When to use a safe work method statement (SWMS)

You (the PCBU) should work with your workers (and their representatives, such as HSRs) to prepare a SWMS before you do any high-risk work.

The work may be high risk if the silica dust can spread in the air and affect other people at work. For example, if you install, modify or repair engineered stone, you may need to cut, grind, trim, drill, sand or polish it. This can create airborne silica dust and make the work area unsafe. You should prepare a SWMS before you do any on-site installation of engineered stone that involves these activities. A SWMS helps you explain to your workers and other people at the construction site how to avoid the health and safety risks of silica dust. You do not need a SWMS for work that you do at a workshop, where you fabricate the engineered stone.

#### Control 6: Personal protective equipment: protect the worker with PPE and RPE

Personal protective equipment (PPE) is anything used or worn by a person to lessen the risk to their health and safety. PPE is a secondary control measure, which means it should be used alongside higher controls such as substitution, isolation, and engineering controls.

Common PPE includes eye and hearing protection, the use of masks to protect the respiratory system, and clothes to protect skin, arms and legs. Respiratory protection and clothing protection are important to keep you from breathing in silica dust.



Do not rely on personal protective equipment (PPE) such as respiratory protective equipment (RPE) to keep you and your workers safe. You should use a mix of controls.

Seek advice to make an informed decision about RPE and risk.

#### **Respiratory protective equipment (RPE) selection**

You must select Respiratory protective equipment (RPE) that provides proper protection from silica dust. The form and type of respiratory protection you choose depends on the level of exposure, work setting and task. You can consult an occupational hygienist or RPE supplier to help you select the most suitable device. You also need to make sure that the RPE works well with other PPE your workers wear and does not create a new hazard by getting in the way of their hearing, head protection or vision.

Workers must receive RPE with the assigned protection factor from you to guard against silica dust. Refer to Table 2 for more information.

#### Table 2: Respiratory protective equipment (RPE)



Workers need to wear a properly fitted half-face respirator with a P2/P3 filter if silica dust levels are low and short-term, as determined by air monitoring.

Ask an expert, like an occupational hygienist, to help you in decision-making.



Workers should use a full-face respirator with a P2/P3 filter for tasks that create low to medium levels of dust, such as abrading or drilling. However, it is wise to seek advice from an expert to assist in decision-making.

You can consider an expert for advice when deciding whether to use a full-face respirator with a P3 filter for higher levels of dust produced by cutting or blasting.



Workers can wear a special breathing device called a powered air-purifying respirator (PAPR) for protection. This device brings in clean air and pushes it towards the worker's breathing space. They work well in certain situations where other devices might not be suitable, like when it's hot or if the worker has facial hair. It is wise to seek advice from an expert to assist in decision-making.

#### Respiratory protective equipment fit testing

No single type of mask can protect everyone, so each worker needs to undergo fit testing for the respiratory protective equipment they choose to check how well it works. A trained person performs fit testing, which can be qualitative (spray test) or quantitative (using a monitoring device such as a Portacount).

#### Respiratory protective equipment fit checking

Before wearing the RPE each time, the worker should check it for damage and do a fit check. A fit check is a quick way to make sure that the respiratory protection fits properly on the face and seals well with the face and the respirator seal. Fit checks are not a substitute for a fit test.

#### Supporting workers in the use of PPE and RPE

You will need the following systems to help workers use PPE and RPE:

- a policy and procedures on how to use and take off PPE safely
- a clean-shaven face policy for all RPE that needs to be sealed with skin
- training, supervision, and information on how to use PPE and RPE correctly, including regular fit checks
- maintenance, storage, and repair guidelines.

#### Worker training and protection

Refer to the Australian Standard 1715:2009 Selection, use and maintenance of respiratory protective equipment, and follow these steps to create a system for managing workers' use of Respiratory protective equipment (RPE) and Personal protective equipment (PPE):

### Step 1: Develop a maintenance, storage, and repair program by:

- planning for the keeping, storing, and repairing of RPE and PPE
- checking equipment often to find any signs of wear, damage or failure
- storing equipment properly so it does not get old or damaged

### Step 2: Issue policies and procedures for silica material handling so you can:

- write clear and simple policies and procedures for using RPE and PPE when working with silica-containing materials
- explain why it is important to use equipment properly and follow safety guidelines.

#### Step 3: Ensure workers do not have facial hair:

- have a facial hair policy that tells workers to be clean-shaven when using RPE, as facial hair can make masks leak
- check workers often to make sure they are following this policy.

#### Step 4: Provide training, supervision, and information:

- provide full training to workers on how to use RPE and PPE
- make sure your supervisors know the safety rules and can help workers
- give your workers information, such as pamphlets or posters, that show why it is important to use safety gear right.



#### Step 5: Check RPE regularly:

- check your masks when a worker changes weight, grows facial hair, or if you think the mask may not work well
- ask workers to tell you if anything changes that may affect how their masks fit and work.

#### Step 6: Work with safety experts:

- work closely with an expert in work health and safety or an occupational hygienist
- ask them for help in developing and putting into place good safety measures
- talk to work health and safety experts often to learn the best ways to keep workers safe.

By doing these steps, you can help keep workers safe when working with silica-containing materials and avoid potential risks associated with the wrong use of RPE and PPE. Regular training, supervision and working with safety experts are key basics in maintaining a good safety program.

#### Health checks for workers

Silica dust can harm your workers' health. By law, you must pay for health checks for workers who could breathe in silica dust. To find out who needs health checks:

- find out which workers do jobs that make silica dust
- find out which workers clean the places or tools that have silica dust on them
- include people who work near where silica dust is made.



A significant risk to a worker's health from working with silica dust triggers the need for health checks and monitoring.

Significant risk will be determined by using air monitoring.

Workers who are at significant risk should get health checks at these three times:

- 1. before they start working for you for the first time. This will show if their health changes later. If a worker has had a health check in the last two years before working for you, and you can see the results, you do not need to do this
- 2. every year, or more often if a health expert says so
- 3. when they stop working for you, such as when they retire or change jobs.



A registered health expert in silica dust and silica-related diseases will do the health checks. Usually, the check process involves asking some questions, testing how well the lungs work, and taking a picture of the chest with either an x-ray or a special scan called a High-Resolution CT scan. To find silica sickness early, Lung Foundation Australia says the High-Resolution CT (HRCT) is better than the x-ray.

The health professional may ask to check your workplace as part of the health monitoring program and request to see air monitoring records. They will tell you how often you need to do health checks and monitoring. This might be different for different workers.

Keep health check records confidential, like medical records. You must give the worker a copy of the health check report and keep records safely for 30 years. If the worker has questions about the report and their health, tell them to talk to the health expert who did the check or their doctor.

If you find out that a worker has developed a disease, illness or injury, report it to WorkSafe Tasmania as soon as you can by calling 1300 366 322 or completing the online notification form.

For more information about health checks and monitoring, go to <u>www.safeworkaustralia.gov.au</u> and search for 'health monitoring for crystalline silica'.

#### Air monitoring in the workplace

You (the PCBU) must ensure that no person at your worksite is exposed to a substance or mixture in an airborne concentration that exceeds the workplace exposure standard of 0.05 milligrams of silica dust time-weighted average in one cubic metre of air in eight hours. An occupational hygienist who studies how work affects health should do the air monitoring. It is important to remember that air monitoring is a measurement tool, not a way to control silica dust. Occupational hygienists help to see if your control measures to reduce silica dust exposure are working well.

Image 6: Comparable dust particle sizes per cubic metre of air



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The workplace exposure standard (WES) for respirable crystalline silica is 0.05 mg/ m3 over an eight-hour workday, five days a week. You must not be exposed to levels exceeding 0.05 mg/m3 during your regular eight-hour daily shifts.





Air monitoring needs to be done:

- 1. when you are not sure if you are below the worker exposure standard, such as when you use new control measures or choose the right RPE
- 2. to see if the workers or other people at the workplace have significant health risks from airborne silica dust exposure.

An occupational hygienist can look at and advise on the air monitoring you need and how often. They can also do air monitoring and write a report that shows how much silica dust is in the air and if it is more than the standard of an eight-hour, time-weighted average (TWA) of 0.05 milligrams per cubic metre (mg/m3). In the report, they can advise on control measures.

You must keep the air monitoring reports for 30 years.

#### **Compliance and reporting to WorkSafe Tasmania**

You (the PCBU) or the person in control of the workplace should tell WorkSafe Tasmania quickly if a notifiable incident happens. A notifiable incident is a serious or dangerous event, such as a death, injury, illness or near miss. Also, telling WorkSafe Tasmania is needed in these situations:

- when there is a failure of physical isolation or engineering controls leading to an uncontrolled release of airborne silica dust or
- when a health monitoring report shows an injury, illness, or disease in a worker, or when the doctor recommends a review of workplace controls.

WorkSafe Tasmania inspectors will check the work safety and health risks at your site. For silica dust, they will look at how you have:

- identified and talked about the risk of airborne silica dust exposure at the site to workers
- written down the risk check for jobs that make silica dust
- done air monitoring and written down the results
- checked how well the control measures work
- written down what you did for each control measure that the occupational hygienist said and why you did not do some of these if that is the case
- made sure that cleaning policies and procedures are followed
- see if the workplace is right for the work you do
- Checked RPE and PPE you give, including how you choose them, how you fit test them, keep them, and look after filter changes
- made sure that workers have had health checks, and you can see the health check reports.

You will find a list of things to do for silica dust at the end of this document. Use it to see if there is airborne silica dust risk in the workplace and if you have measures in place to protect workers from silica dust. You can check your workplace yourself with this list.

#### More information

WorkSafe Tasmania at worksafe.tas.gov.au:

- <u>Managing the risks of respirable crystalline silica from engineered stone in the workplace code of practice</u>
- <u>Construction work code of practice</u>

Safe Work Australia resources at <u>safeworkaustralia.gov.au</u>:

- Safe work method statement for high-risk construction work information sheet
- Interactive safe work method statement guidance tool
- Workplace exposure standard for respirable crystalline silica
- Exposure standards: airborne contaminants
- Guidance on the interpretation of workplace exposure standards for airborne contaminants
- Health monitoring for crystalline silica

#### Other resources

• AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment





## Silica dust risk management checklist

Use this checklist to manage silica dust at your site. The checklist lines up with the regulatory requirements under the Work Health and Safety Act 2012 and the Work Health and Safety Regulations 2022.

Your trade, tasks and the materials you use will affect how much and how many risks of silica dust you have, as each workplace is different. Some questions in the checklist may not be for your workplace.

Find more information:

- go to the WorkSafe Tasmania website at worksafe.tas.gov.au
- call WorkSafe Tasmania on 1300 366 322
- refer to the matrix of controls following this checklist
- consult this guidance note.

#### **Managing risks**

Regulation	Managing risks	Yes	No
r34	Have all materials that contain crystalline silica been identified?		
	Have all tasks that are silica dust generating been identified?		
r36	Have one or more higher-level control measures been implemented? For example, elimination, substitution, isolation and engineering controls.		
	Is work performed nearby visible dust that a person would reasonably believe contains silica?		
	Has one of the following engineering controls been implemented? Water suppression, on-tool extraction, local exhaust ventilation.		
r40	Is there adequate ventilation to perform work? Evidence of dust in work areas is an indication ventilation is not adequate, or as indicated in results from air monitoring.		
r36	Are the higher-level controls supported by administrative controls?		
	<ul> <li>housekeeping policies including workplace cleaning and disposing of slurry from water suppression methods</li> <li>equipment maintenance and cleaning</li> <li>shift rotation and time limits for tasks</li> <li>signage indicating silica hazards in the workplace</li> </ul>		
r36 & r44	Have workers been provided suitable personal protective equipment?		
	<ul> <li>suitable size, fit, and nature of hazard</li> <li>clean and hygienic</li> <li>in good working order</li> <li>used and worn by the worker</li> </ul>		
r37 & 38	Is there a schedule of review and maintenance for all control measures implemented?		

Regulation	Managing risks					
r35 (s19)	5 (s19) Overview: Are the risks of silica dust exposure in the workplace being managed effectively? For example:					
	<ul> <li>safe systems of work</li> <li>hierarchy of controls implemented</li> <li>training including storage of training records</li> <li>clearly communicated working with silica information</li> <li>worker instruction on managing exposure during work tasks</li> <li>supervision</li> <li>safe use handling and storage of substances</li> <li>the conditions of the workplace are regularly monitored to prevent illness or injury of workers</li> </ul>					
Respiratory	protective equipment (RPE)					
r44	Have workers been provided with suitable RPE to control the residual risk of silica dust exposure?					
r44	Is the RPE being worn by workers properly when required?					
r44	Is the RPE provided consistent with that recommended by the safety data sheet (SDS) or product information sheet?					
	Does the RPE have a suitable APF for the task?					
r44	Is the RPE clean, hygienic and in good working order?					
r44	Is the RPE suitable for size, fit, and comfort? Fit testing is recommended for all RPE requiring facial seal for effectiveness.					
r44	Have workers been provided information, training, and instruction on the use, wearing, storage, and maintenance of their RPE?					
r46	Do workers wear their RPE under requirements? • training • policies and procedures • fit checking and clean shaven					
r49 & r50	Has it been confirmed that the workplace exposure standard has not been exceeded? Air monitoring is performed to determine exposure levels. Air monitoring records must be kept and maintained for a period of 30 years.					
Engineering of	controls					
r36	Is the work with silica-containing materials isolated from other work areas?					
	Are wet methods in use?					
	Are dust extraction methods used either on tool or local exhaust?					

Regulation	Managing risks						
WATER SUP	WATER SUPPRESSION						
r37	Is water suppression being used? If yes, answer the following questions to help determine if the control measure is fit for purpose.						
	Is it suppressing most of the visible silica dust generated?						
	Is the mist suitably controlled and slurry collected?						
	Is the mist suitably controlled and slurry collected?						
ON-TOOL E	ON-TOOL EXTRACTION						
r37	Is on-tool extraction being used? If yes, answer the following questions to help determine if the control measure is fit for purpose.						
	Is the on-tool extraction capturing most of the visible silica dust generated?						
	Does the dust extraction filter unit meet the requirements of at least M-class (H-class is also acceptable) as described in AS 60335.2.69?						
LOCAL EXH	IAUST VENTILATION						
r37	Is local exhaust ventilation (LEV) being used? If yes, answer the following questions to help determine if the control measure is fit for purpose.						
	Is the LEV capturing most of the visible silica dust generated?						
	Does the LEV filter unit meet the requirements of at least M-class (H-class is also acceptable) as described in AS 60335.2.69?						
Health monit	toring						
r368 & 372	Has relevant health monitoring been provided to all workers at risk of silica dust exposure? All costs of health monitoring are to be covered by the PCBU.						
r369	Have all at risk workers been informed of the need to undertake health monitoring?						
r371	Can you prove that the person conducting the health monitoring is a registered medical practitioner with relevant experience?						
r375 & 378	Have workers been provided with a copy of their individual health monitoring report?						
	Are health monitoring reports stored in a secure location?						
	Health monitoring reports must be retained for 30 years.						
r376	Have health monitoring reports been provided to WorkSafe Tasmania when they contain advice that test results indicate a disease, injury or illness, or recommendations to take remedial actions?						

#### Table 2: Matrix of controls

	Combination of control measures and supporting requirements*							
Task/Product	Do I need isolation controls?	What cutting method should I use?	What dust collection or ventilation do I need?	What administrative controls do I need?	Do I need to provide RPE and what kind?	Do I need to organise air monitoring?	Do I need to provide health monitoring?	What else do I need to do?
Red: Engineered stone and high content silica materials	Yes: Significant exclusion zones from other workers RPE worn for surrounding workers	Wet only**	Local exhaust and/or H-class on tool dust extraction	<ul> <li>signage</li> <li>housekeeping policy</li> <li>maintenance policy for plant, equipment, and PPE</li> <li>clean-shaven policy for tight- fitting RPE</li> <li>task scheduling</li> </ul>	Yes: APF 25-50 for operator	Yes, for control effectiveness and compliance as indicated	Yes, and consider the exposure of surrounding workers	Fit testing of RPE
Orange: Silica content up to 50%	Yes: Significant exclusion zones from other workers with RPE worn for surrounding workers	Wet only**	Local exhaust and/or H-class on tool dust extraction	<ul> <li>signage</li> <li>housekeeping policy</li> <li>maintenance policy for plant, equipment and PPE</li> <li>clean shaven policy for tight fitting RPE</li> <li>task scheduling</li> </ul>	Yes: APF 25-50 for operator	Consider when changing controls	Yes, and consider surrounding workers	Fit testing of RPE
Orange: Silica content up to 25%	Yes: Exclusion zones with RPE worn for surrounding workers		Local exhaust or H- or M-class on tool dust extraction Where controlled, modification can be undertaken outdoors	<ul> <li>signage</li> <li>housekeeping policy</li> <li>maintenance policy for plant, equipment, and PPE</li> <li>clean-shaven policy for tight- fitting RPE</li> </ul>	Yes: APF 10-25 for operator			Fit testing of RPE
Yellow tasks: Silica content <15%	Consider exclusion zones	Wet or Dry with manual tools and dust capture	Local exhaust or M-class on tool dust extraction Where controlled, modification can be undertaken outdoors	<ul> <li>housekeeping policy</li> <li>maintenance policy for plant, equipment, and PPE</li> </ul>	As indicated or as a backup for failure of higher-level controls	Control effectiveness and compliance	Yes, if exposure is significant	As indicated

\* You should choose the best way to protect your workers from silica dust based on your risk assessment. The different ways you use should work well together. For example, if workers use water to cut down the dust, they should also use a good dust collector or fan to get rid of the mist.

\*\* Workers should always control the dust when they cut materials that have silica in them. Do not cut them dry without any protection.



For more information contact Phone: 1300 366 322 (within Tasmania) (03) 6166 4600 (outside Tasmania) Fax: (03) 6173 0206 Email: wstinfo@justice.tas.gov.au

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