Safe Work Australia (SWA) Public consultation on the prohibition on the use of engineered stone March **2023**

Response to SWA Consultation paper

Respirable Crystalline Silica (RCS) is generated during mechanical processes. Even short-term exposure to RCS can cause harm.[1]

To date, we have been ineffective in changing the way work has been, and is being done. The way we do these mechanical tasks is still causing harm. Our inaction on current practices has had tragic consequences. We do, all of us, need to act.

There are better processes; there are better ways of undertaking the task. Many are already known, some have yet to be adopted and some yet to be developed. With the perspective of an occupational hygienist and a WHS practitioner with a policy background of many years; we need to do better and we can.

Working better

When controlling the risk of exposure to RCS, the hierarchy approach starts with eliminating the risk. This also means substitutions i.e. using less hazardous materials, isolation of the source from the person and engineering techniques that prevent exposure. All levels of the hierarchy can be used in **combination** and each level acts to reduce harm.

In practice, one would identify hazards first and determine if there is a risk of exposure and resultant harm. After implementing appropriate controls, we would continue to evaluate the risks to ensure these controls are working.

Either way it is not one single control, it is a combination of controls that is usually most effective. According to the report *Future burden from occupational silica exposure in Australia* by Curtin University 2022 (page v) [2]

[1] SLR Consulting (2020), Research Report for Short Term Exposure Limit for Respirable Crystalline Silica for Safe Work Australia

Note: The International Agency for Research on Cancer classified crystalline silica as a Group 1 (definite) carcinogen in 1997 and 2012.

[2] Carey R, Curtin University (2022), The future burden of lung cancer and silicosis from occupational silica exposure in Australia: A preliminary analysis . Report commissioned by the Australian Council of Trade Unions (ACTU) April 2022

Modelling of interventions for occupational RCS exposure demonstrated that higher order controls (specifically elimination) are likely to have the most impact, as expected. However, modelling also demonstrated that significant impact can still be achieved with the use of administrative and engineering controls (when the latter is used together with respiratory protective equipment which meets recognised quality standards and is worn correctly).

Good controls to manage the risks usually involves a combination of each of the controls. **We need to use all levels of control in combination to gain best effect.**

Curtin University also found that

60% of stonemasons did not use adequate controls and thus were exposed to RCS at a high level, with the remainder (40%) exposed at a low level.

We need action. Action that focuses on the work practices. We already have the legislative tools to manage the risks – we need to use them, all of them, more effectively.

Risk Management

Over many years much research has provided evidence for a methodical approach of risk management. Risk management is a systematic process that involves four steps:

- identifying the hazard
- assessing the risk
- controlling the risk, and
- reviewing control measures.

WHS laws establish a duty for all involved in work. There are requirements to manage the risks and guidance on how to manage the risks. For silica dust Safe Work Australia (SWA) guidance [3] notes that

As the duty holder, you will need to implement a combination of different control measures to eliminate or minimise generating silica dust at your workplace. This includes when working with naturally occurring silica (for example in mining or tunnelling) *or working with products containing high amounts of silica (such as engineered stone).*

[3] Safe Work Australia, 2022, https://www.safeworkaustralia.gov.au/safety-topic/hazards/crystalline-silica-and-silicosis/choosing-and-implementing-control-measures-silica-dust

Specific actions for each of the controls are detailed in SWA publications and accessible from their website. (Appendix 1 to this document has some of the key controls listed). As SWA DRIS[4] notes

Although Safe Work Australia and state and territory WHS regulators have published relevant Codes of Practice, guides, and other information, further work could be undertaken to explain the requirements of model WHS laws, focussing on formats that are accessible and suitable for the range of different PCBUs, workers and other duty holders working with silica.

Options for action

1. Focus on Controls

Elimination of silica containing products

Of course, where it is reasonably practicable, then silica containing products should be eliminated from the workplace. This may be possible for some work. Removing silica containing products entirely though, would not be realistic for construction, mining, tunnelling, brickworks, trenches, landscaping(and other earth works), masonry, any sandstone work, ceramics, sculpting, grouters and tilers and other operations.

The entire range of industries involved in these operations would be impacted by such a generalisation. This encompasses a huge percentage of work and workers. [5]

Such a comprehensive elimination would include maintenance or minor work such as electricians installing power points into benches. If widened to **all** industries anyone moving stone or modifying stone or brick that raises dusts would be captured. Ceramicists, sculptors, tilers, this would involve a much wider range of occupations. Indeed wider than those listed in the SWA DRIS.

[4] Safe Work Australia Decision Regulation Impact Statement : Managing the risks of respirable crystalline silica at work February (2023) P27 Decision RIS (DRIS) Accessed March 2023

[5] I am unable to cite hard statistics but ABS statistics for workers just in the main industries for 2021 show, *As of November 2021, the construction industry employs approximately 1,143,600 people (around one in 10 workers). This constitutes **8.7 per cent** of the total workforce. Mining covers the exploration and extraction of minerals, oil and gas. Around **2.1%** of workers have their main job in this industry.* Accessed March 2023

And there are many more secondary industries that support the main contenders in construction, mining, tunnelling, trenches, stonemasonry etc. These secondary industries appear to have been missed in the SWA DRIS. This group also includes many businesses that undertake minor work or modification work.

Of course, each small operator (or where there is a minor task) must still use available techniques to minimise exposure. However, small operators (or minor task work) may not have the resources to reskill and re-licence for small jobs. Nor would they have the resilience to re-jig their operations especially for small modification work and these operators may become unfortunate "by-catch".

Awareness for all workers is not enough, but a national programme for training, education and enforcement would certainly help. Using **behavioural insights for a national programme** would give the smaller operators the much needed knowledge and skills as well as requiring appropriate controls.

Furthermore, the broader impact of a total ban (including costs) has not been properly considered or understood in the Decision Regulation Impact Statement.

Whilst we want action across industries, an exemption for clearly defined minor work is therefore needed. **In my view, even with exemptions, minor work should still require appropriate controls**.

The Curtin University report [6] states

Approximately 1.0% of projected lung cancer cases could be expected to occur in the subgroup of the current Australian adult population exposed to RCS at work, as a result of their exposure.

From a cohort of 18,770,982 adult Australians in 2016, it is estimated that 5.4% (n≈1,022,150) will develop lung cancer over their lifetime, of which 1.0% (n≈10,390) are attributable to occupational exposure to RCS.

When extrapolated to silicosis, we estimated that between 83,090 and 103,860 cases of silicosis would result from current occupational exposure to RCS.

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[6] Carey R, Curtin University (2022), The future burden of lung cancer and silicosis from occupational silica exposure in Australia: A preliminary analysis . Report commissioned by the Australian Council of Trade Unions (ACTU) April 2022 (page vi)

I agree that the health outcomes from silicosis are probably underestimated.

Research to date also indicates that **compliance with current legislation and use of acceptable work practices is low**.

Surely this means we should focus on compliance and acceptable work practices.

The question remains - How do we best prevent this 1% or more of lung cancers attributed to occupational exposure, without prohibiting all operations that involve silica products?

2. Workplace Exposure Standards

It should be noted that under WHS legislation there already exists a duty to ensure the workplace exposure standard is not exceeded. This duty is not qualified by 'so far as is reasonably practicable'. A person in charge of a business or undertaking must ensure that **no person at the workplace is exposed to a hazardous chemical, such as crystalline silica, at a concentration above the workplace exposure standard**.

The workplace exposure standard for respirable crystalline silica has recently been changed to an eight hour time weighted average (TWA) of 0.05 milligrams per cubic metre (mg/m^3).

The workplace exposure standard (WES) is **not a dividing line between safe and unsafe.** A WES is designed to encourage and guide the use of controls to prevent exposure.

It should also be remembered that both **air and health monitoring are measuring RCS during or after exposure**. Implementing controls and managing the risk aims to **prevent** exposure.

WES action levels also apply. This is 50% of the required standard, so if the RCS concentration standard is lowered to 0.02 mg/m^3 the action level would then be 0.01 mg/m^3. The findings in the SWA report [7] (p16) state

it is unlikely that RCS can be accurately and precisely measured below 0.02 mg/m^3 .

[7] SWA Measuring RCS (2022)*The report into measuring airborne concentrations of respirable crystalline silica found that there was uncertainty in measuring 0.02 mg/m3 with the current sampling and analysis equipment available in Australia. This was due to multiple reasons including sampling error, analytical uncertainty and laboratory reporting and performance. This report recommended that more work be done on measurement standards and laboratory techniques in Australia before the WES for respirable crystalline silica is reduced to 0.02 mg/m3*

Indeed, it is difficult to measure very low levels of RCS with current techniques. Measuring techniques for a lower standard would need to be improved before lowering the workplace exposure standard further. Resources for Universities and laboratories and other stakeholders would be needed to investigate and improve measurability.

A lower standard cannot be enforced without the techniques, the laboratories, and the trained professionals to provide a robust analysis. The regulators could not be confident about enforcing unmeasurable standards. Such exposure standards would also require further and more extensive monitoring and extensive professional support. This takes time. There are few laboratories and few professionals, certainly not enough for widespread expansive change to the exposure standard.

Measuring a WES for RCS of 0.02 mg/m^3 (adjusted to 0.014 mg/m^3 for some 12 hour shifts) can't be undertaken with accuracy until such time as methods with sufficient sensitivity, reliability and accuracy are available and valid. (SWA Measuring RCS, 2022, P36)

Research to evaluate effective techniques should be supported by government before considering further lowering exposure standards.[8]

Any such change may not be the best use of resources to prevent exposure.[9] Furthermore, this was not costed in the recent consultations and would require a regulatory impact assessment.

[8] SWA Measuring RCS (2022) *p35 results reported to be under the WES may be at or above the WES when uncertainty is taken into consideration (and vice versa). The pressing issue is for employers, unions, industry bodies and government agencies to recognise, understand and support the need for improved sampling and analytical methodologies in the context of measuring RCS.*

[9] Safe Work Australia Decision Regulation Impact Statement : Managing the risks of respirable crystalline silica at work February (2023) Decision RIS (DRIS) p74, *processing of health and air monitoring data of the quanta proposed in the CRIS may not be a productive use of WHS regulator resources* Accessed March 2023

3. Define work practices with exposure to silica dust as High-Risk

Working with RCS could be defined as high-risk work. SWA has a definition.[10] This would mean in the workplace the following would have to be determined

- Does the work to be undertaken fit the definition of high-risk work?
- What is the exposure for these tasks or group of tasks?
- What is the hazard after using the combination of controls, and so what is the risk of harm?

High-Risk work already requires risk management plans or safe work method statements (SWMS). If we define High-Risk Work as work where silica containing products expose workers to silica dust then a risk management plan or SWMS is required.

A risk management plan documents the steps taken to identify the hazard, assess the risk and record the combination of controls. A risk management plan includes informing and training workers; undertaking air sampling where needed and it may also involve individual health monitoring where necessary.

This risk management plan encompasses the risk to **all** workers exposed to silica dust. This can be broader than just those primarily working on engineered stone or tunnelling or other tasks. (I understand that this approach seems to be included in SWA Option 5a)

We could start with a definition for the work undertaken as High-Risk Work (as outlined in SWA DRIS (p37) [11]rather than focusing on the product or the presence of silica in the product.

4. A Trigger for action to prevent exposure

There is no defining line nor set number between safe and unsafe. However more and more controls can be implemented to eliminate or minimise the risks.

[10] Safe Work Australia Decision Regulation Impact Statement : Managing the risks of respirable crystalline silica at work February (2023) Decision RIS (DRIS) Accessed March 2023 p37 *A high risk crystalline silica process means a crystalline silica process where: it is reasonably likely that workplace exposure standard will be exceeded, or the PCBU is not certain on reasonable grounds that workplace exposure standard will be exceeded, or there is a health risk from exposure to silica dust*. Accessed March 2023

[11] Ibid

In the Victorian *Occupational Health and Safety Amendment (Crystalline Silica) Regulations 2021* engineered stone containing 40% or more crystalline silica is used as the threshold for further regulation.

This threshold is used to trigger the actions that must be taken to control the risk. **It is not about the health evidence** around a % content of the product itself.

The actions required are those that prevent exposure. Controlling the risk or risk management are actions designed to prevent exposure.

5. Reporting, monitoring and registration

Reporting when exposure may have occurred and reporting when there is any heath monitoring is part of current WHS requirements. WHS laws could clarify these requirements specifically for silica exposures and include detail for health monitoring and a medical register. I understand this is already outlined in SWA guidance and this includes better medical screening techniques.

Again exemptions would need to be specified. For example exemptions for minor work such as an electrician installing a power point, or minor removal modifications, sampling and other tasks (as listed in SWA Consultation paper Option 6)

6. Air Monitoring – dust sampling

Air monitoring is useful not just for the individual workers (during or after exposure) but it can act as an indicator to **prevent** exposure. With this in mind, air sampling can be done on a generic basis grouping similar tasks. Research could provide evidence for the expected exposure levels for any group of tasks.

This is already possible and used for other hazards under the WHS legislation.

Such groupings is like the Similar Exposure Group sometimes used in sampling. It would be inefficient and onerous to monitor for every individual task undertaken each time it is undertaken. Of course, where circumstance change from the generic task, monitoring is required. Again this is already used in other areas under the current WHS laws.

It is uncontrolled operations that have been studied. It is uncontrolled operations that are causing harm. It is **uncontrolled operations that need to stop**. The SWA DRIS (p22) and others have quoted a particular study

In one study, it was shown that six minutes of uncontrolled concrete cutting would greatly exceed the current WES even if it was the worker's only exposure to RCS in the workday (Brooks & Rae 2021).[12]

This is an awful indictment, but highlights the need to control the work. Dust sampling for high-risk work can be done as part of a regular system. It does require expertise to set it up and to analyse the samples. Qualified professionals and laboratories do exist but not in vast numbers. However, organisations could have an overseeing professional as we did with COVID testing in the workplace.

Hence, a **generic approach with oversight** could help workplaces understand and implement controls to prevent exposures. This would be more effective and be more efficient.

Regulation 50 already requires monitoring if there is uncertainty about exposure. And, exposure incidents or exceedances would still be reported and recorded as is currently required under model WHS laws.[13]

7. Health monitoring – including national medical registry

Health monitoring must be done or supervised by a medical doctor with experience. Health monitoring is already required under WHS legislation[14]. SWA has developed a guide on Health Monitoring for RCS[15]

Mandatory reporting of respiratory diseases through a medical registry would help track and compile data. An independent national agency could coordinate and maintain a registry.

Any such independent national body needs to have a wider brief than just health and have wider expertise. Such an agency exists and has experience in national strategic plans for other respiratory diseases. Rather than create such a body, I believe there are advantages to using an existing independent agency that already has this background and expertise.

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[12] Brooks, M & Rae, H 2021,'Change the way we communicate dry cutting risks', in, *Proceedings of the Australian Institute of Occupational Hygienists Annual Conference and Exhibition 2021.*

[13] Safe Work Australia Decision Regulation Impact Statement : Managing the risks of respirable crystalline silica at work February (2023) Decision RIS (DRIS) p74 *Option 5 has been refined in the DRIS to only require the reporting of WES exceedances, rather than all air monitoring data. Similarly, only adverse health outcomes would be required to be reported, in line with existing requirements*. Accessed March 2023

[14] *Ibid*

[15] SWA (2020) Health Monitoring – Guide for crystalline silica Accessed March 2023

8. Licensing

Awareness and training, especially training in the best techniques for the tasks, are an essential part of achieving behavioural change. Providing confidence to all involved in the work is also important and can be achieved by accrediting or licensing. Licensing provides opportunities for improving work techniques and for data collection as well. Different classes of licensing can be used e.g. Class A for high risk tasks. A licensing system should be national but does require maintenance and enforcement. The suggested independent national agency could perform some of these co-ordinating functions.

A national framework for accreditation and licencing would greatly assist.

9. Research is needed too

New studies are needed to provide information on exposures for particular work. Also, to provide information on effective controls for the tasks especially high-risk tasks. This would guide and prioritise actions.

The SWA proposals (Table included in Appendix 2 of this document)

Given the actions listed above I support

- implementing **Option 2** - National awareness and behaviour change initiatives that include skills for utilising technical improvements and innovations[16] Programmes and materials would be developed through a national independent authority jointly with the existing SWA consultative mechanisms. A national authority would also manage national data. [17]

[16] Safe Work Australia Decision Regulation Impact Statement : Managing the risks of respirable crystalline silica at work February (2023) Decision RIS (DRIS) Accessed March 2023p34 *The behaviour change component of Option 2 would move beyond simply clarifying or raising awareness of the requirements of the model WHS laws and take a behavioural economics approach to improving the compliance practices of duty holders.*

[17] The proposed awareness and behaviour change initiatives should not require legislative amendments. Materials for these initiatives can be developed using the current consultative process available through SWA in conjunction with an independent national body and in consultation with experts

- implementing **Option 5a** - Regulation of high-risk crystalline silica processes for all materials (including engineered stone) across all industries but as defined below. This means the additional regulation in **Option 5a** applies to all silica-containing materials, not just engineered stone, but this approach would include: defining **minor work**, defining **High-Risk work**, developing and maintaining a **risk control plan; ensuring appropriate combination of controls are in place;** using a **generic** or grouped task format, **training/skilling all levels of workers; exemptions for minor work on existing products; Licensing (with exemptions); and undertaking air and health monitoring as appropriate.**

About SWA Option 6 - Prohibition of use of all materials including engineered stone

An all-encompassing prohibition does not seem sensible nor feasible. However, an effective approach might be to **define prohibition as**

- Prohibition on the use of engineered stone containing 40% or more crystalline silica and licensing of PCBUs working with engineered stone containing less than 40 % crystalline silica. (Recognise that this is a **trigger for action** not a health-based action nor a line between safe and unsafe) Action levels might also apply to other tasks in other industries

- **Exemptions** would still apply for: sampling and identification; removal, repair and minor modifications of engineered stone already installed and may apply to other tasks in other industries. **Minor work** also needs to be more clearly defined. For example, installing power point in engineered stone bench tops would need to use sensible controls but would not be prohibited nor require an extra licence. Similar application for minor work in wider operations would also apply
- Encouragement, research and support for **improved techniques and research on effectiveness of controls** (including combinations of controls)
- Research to identify **generic exposure** tasks and effective controls
- **National licensing and accreditation, education and training** (similar to SWA Option 4 as listed in Appendix 2 of this document)

- **Using SWA definition of High-Risk Work** and consequential risk control plans with national reporting on incidents of exposure that exceed the WES and corresponding monitoring

- Independent national agency for a national strategic plan that **promotes awareness and training, maintains a medical registry and assists coordinate** across government regulators for licensing, incident data and to share improved techniques

In-Brief

In reality the focus should be on **better work practices**, not just on the product. This means **managing the risks effectively to <u>prevent</u> exposure**.

As noted above, this requires a comprehensive practical approach. Hence more national awareness programmes with a focus on behavioural outcomes, more training, licensing and accreditation. It involves a thorough application of the full combination of controls. It includes Risk Control Plans that can be effective and where necessary are notifiable. The definitions e.g. High-Risk Work or minor work needs to be clear. Plus, there is a need to resource research for better engineering controls and further technical improvements.

In addition, the coordination of a national strategic plan is required with reporting and recording of national data alongside nationally consistent enforcement.

Some proposals can be implemented quickly. Safe Work Australia members have already undertaken much good work**.** There are guides and Codes of Practice that need to be applied more rigorously. Industry needs to understand and adopt these recommendations, regulators need to advise, support and enforce.

There are a number of approaches being considered all at once. Some are underway and some have unresolved issues. Not all these approaches have been captured in the DRIS. There are recent changes to the WES and proposed new reduction in WES. There is work on engineered stone itself currently being implemented in some states. There is a debate on defining exposure and hence this has implications for the prevention of exposure in the workplace. The debate on regulation 49 includes if the use of personal protective equipment as a means of control to below exposure standards is acceptable. This also has far reaching implications. There are much needed changes to measurement and techniques that are still not finalised.

In three years, an independent national authority jointly with SWA should review the impact of the measures already in the pipeline and any risk management suggested above that is about to be or has been implemented.

In Summary for Prevention we need

1. **Focus on controls** – no matter the WES, no matter the task, prevent exposure with a combination of controls
2. **Enforce the current WES** - eight hour time weighted average (TWA) of 0.05 milligrams per cubic metre (mg/m^3) and review effectiveness
3. **Define clearly High-Risk Work**[18] (including Risk Control plans) and **define minor work**
4. **Use a trigger for action -** initially 40% action level used by Victoria then review
5. **Reporting, monitoring and medical registration**
6. **Workplace Monitoring** – air monitoring (generic /SEG with oversight) and health monitoring
7. **National Licensing, training/education, national behavioural awareness** programme. (**define minor work** for licence exemptions).
8. **Research for better engineering controls** and further technical improvements

A specific note about SWA Consultation questions

Q1, Q2 and Q3 - I support a 'prohibition' as defined and listed above (see also p11 this document). Note: A 'prohibition' includes the use of engineered stone with high silica content and other high-risk tasks.

Q4, Q5 and Q6 - I don't have hard data for these questions. Some of the data referenced in SWA DRIS did not seem to be complete. I am uncomfortable about using the current DRIS tables etc. There doesn't seem to be robust data available.

Q8 - Option 6 in the Decision RIS is discussed above (see also p11 this document)

[18] Safe Work Australia Decision Regulation Impact Statement : Managing the risks of respirable crystalline silica at work February (2023) Decision RIS (DRIS) p37 *it is reasonably likely that workplace exposure standard will be exceeded, or the PCBU is not certain on reasonable grounds that workplace exposure standard will be exceeded, or there is a health risk from exposure to silica dust*. Accessed March 2023

Q9 - Other options or issues for consideration include definition for minor work, using current WES and air monitoring limitations. These are outlined above (p1-11 this document). SWA notes in the DRIS that it has not found any data sets for other silica related diseases (SWA DRIS p79) Further research might be needed to establish the evidence.

Q10 - As outlined above, developing a **national strategic plan** through an existing independent authority, can start now. This would include national data collection and managing an improved medical registry. Using an existing authority, a National Behavioural Awareness programme and establishing the basis for a licensing scheme can start almost immediately. SWA guidance materials can be promoted and used almost immediately. This must, however, include clear definitions e.g. for minor work and high-risk work. Government initiated research for improved techniques can start immediately. Studies on high-risk tasks and on grouping high-risks tasks can start immediately.

Some actions can be taken immediately, some need time. A transitional period is therefore necessary. This is especially true for any change to WES, if there is a 'prohibition' on high silica content engineered stone as defined above (p11 of this document). Time needs to be taken for the national awareness program to build skills and confidence. Time needs to be taken to develop better techniques for controls and measurement.

Staggering some of the proposed actions over transition period of the usual three years is recommended. A time line can be a good way to communicate these stepped actions.

Appendix 1:

SWA Controls for Risk management of RCS

Using the hierarchy of controls for the risk management of RCS involves first assessing and implementing elimination and engineering controls, administrative controls and Personal Protective Equipment (PPE). It is a combination of controls that is often most effective.

According to Safe Work Australia (SWA)[19]

As the duty holder, you will need to implement a combination of different control measures to eliminate or minimise generating silica dust at your workplace. This includes when working with naturally occurring silica (for example in mining or tunnelling) or working with products containing high amounts of silica (such as engineered stone).

Controls- Elimination

You can eliminate silica dust at the source by eliminating the processes that generate dust. For example:

- *adopting production processes that generate less dust*
- *for example, any wet method is likely to generate less dust than a dry one*
- *treating the dust at the point of generation, as this is more effective than capturing airborne dust, and*
- *treating the dust on its transmission path using dust suppression techniques*
- *for example, water sprays, chemical additives, local exhaust ventilation (LEV), vacuum.*

Substitution can be an effective way of managing the risk of exposure to silica dust. For example, you can:

- *use products that do not contain silica or have less silica in them*
- *use a silica containing product that does not need to be cut, ground or polished, and*
- *use a liquid or paste form of a silica product.*

[19] Safe Work Australia 2023 https://www.safeworkaustralia.gov.au/safety-topic/hazards/crystalline-silica-and-silicosis/choosing-and-implementing-control-measures-silica-dust Accessed March 2023

Controls - isolation

Isolation is where you place barriers or distance between a hazard and your workers.

Isolation controls include:

- *isolating high dust generation work processes within an enclosed room with restricted access*
- *providing physical barriers and exclusion zones between different workers and workstations to prevent dust or water mist from moving into other work areas or towards other workers*
- *distancing a work process from other workers.*
- *for example, consider where other workers are working when powered hand tools are used*
- *designating a room or area for other tasks such as changing or eating, away from the work area.*

You can also use barriers around automated tasks to shield workers from silica dust.

Wherever possible, workers should not fabricate silica containing products at the installation site. If modifications at the installation site need to be made, this work should be done outdoors in a designated area, wearing appropriate PPE and using engineering controls, including wet methods and dust collection systems.

Engineering controls to control silica dust include:

- *automation when cutting, grinding or drilling*
- *using wet cutting methods*
- *local exhaust ventilation*
- *drills, routers, saws and other equipment designed to be fitted with H-class local exhaust ventilation and a water attachment to suppress dust*
- *using sacrificial backer-boards or spoil boards*
- *fitting large machinery such as excavators and bulldozers with positive pressure enclosed cabs, and*
- cleaning up dust with a M or H-class industrial vacuum cleaner.

Ventilation is a very effective engineering control when designed correctly. There are a range of different ventilation systems and you need to use the ones that suit your workplace and the tasks your workers carry out.

Controls - Administrative and PPE

There are more details on SWA website.[20] although it is worth noting here that

If you rely solely on one control measure, such as PPE, there may be a significant risk to your worker's health and you may be breaching WHS laws. It has been shown that solely relying on PPE does not adequately protect your workers.

[20] Safe Work Australia 2022, https://www.safeworkaustralia.gov.au/safety-topic/hazards/crystalline-silica-and-silicosis/choosing-and-implementing-control-measures-silica-dust Accessed March 2023

Appendix 2:

SWA DRIS (2023) Government Interventions the Range of options (Table 10 p32)[21]

Table 1: Regulatory and non-regulatory options

Number	Option	Option type	Description
1	Base case	N/A	This option includes the existing requirements of the model WHS laws, as well as several national regulatory initiatives that are underway.
2	Awareness and behaviour change initiatives	Non-regulatory	Awareness and behaviour change initiatives targeted to workers, PCBUs and other duty holders in the construction, manufacturing, demolition tunneling, quarrying, and mining industries.
3	Clarification of existing requirements in the model WHS Regulations for defined high risk silica processes	Regulatory	Amendments to the model WHS Regulations to clarify how the existing requirements apply to defined "high risk silica processes". This would have no additional regulatory burden.
4	National licensing framework for PCBUs working with engineered stone	Regulatory	Implementation of a national licensing framework for PCBUs working with engineered stone through changes to the model WHS laws.
5a	Additional regulation of defined high-risk crystalline silica processes, **including** engineered stone	Regulatory	Amendments to the model WHS Regulations for high risk silica processes (as per Option 3) with additional regulatory requirements.
5b	Additional regulation of defined high-risk crystalline silica processes, **excluding** engineered stone	Regulatory	
6	Prohibition on the use of engineered stone	Regulatory	Amendments to the model WHS Regulations to prohibit the use of engineered stone with the exception of removal, repair and minor modifications of engineered stone already installed.

[21] Safe Work Australia Decision Regulation Impact Statement : Managing the risks of respirable crystalline silica at work February (2023) P32 Decision RIS (DRIS) Accessed March 2023