CEMENT CONCRETE & AGGREGATES AUSTRALIA

RCS Awareness

Regulations and best practice safety management

25 March 2025 | Doltone House Hyde Park

This event has been supported through funding from the Australian Government Department of Employment and Workplace Relations.

Welcome

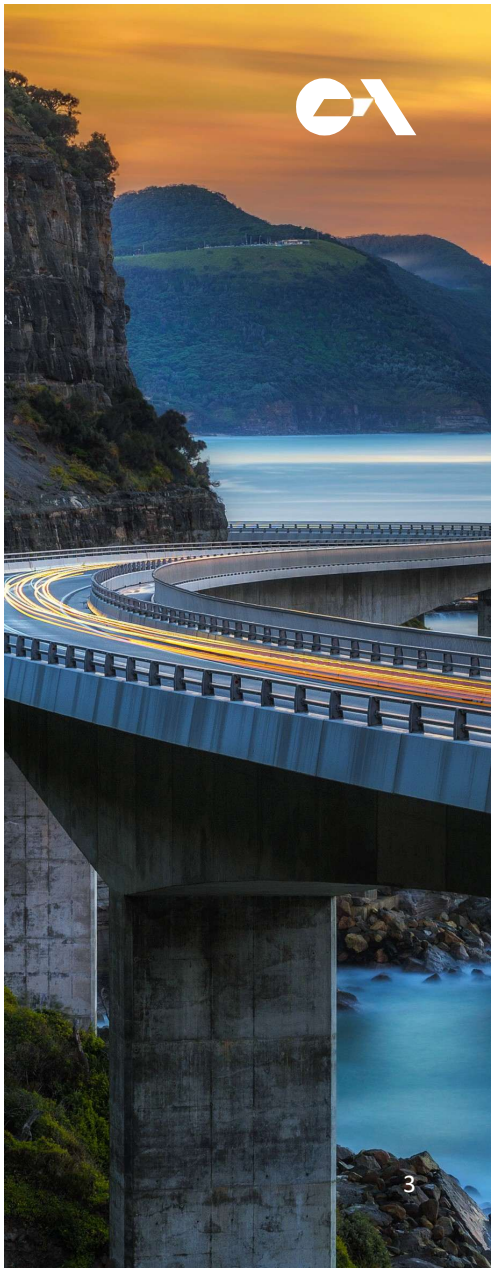
Michael Kilgariff
CEO
CCAA

About CCAA

Cement Concrete & Aggregates Australia is the voice of the heavy construction materials industry in Australia.

CCAA membership supply around 90% Australia's cement, concrete & aggregates used to build infrastructure.

The industry generates approximately $15 Billion in annual revenues and employs approximately 30,000 Australians directly and a further 80,000 indirectly.



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CEMENT AUSTRALIA

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Associate Members

CCAA Strategic Policy Priorities

CCAA STRATEGIC PRIORITIES	FOCUS AREA	STRATEGIC OBJECTIVES
1. ADVOCACY & REPUTATION	Link industry narrative to national challenges	Consistent messaging of importance of sector to the development of our nation's transport, energy, water, housing, defence, and social infrastructure, as well as climate resilience
	Build industry reputation	Strengthen industry's reputation
2. SUSTAINABILITY & DECARBONISATION	Biodiversity	Streamline environmental approvals process
	Deliver the Cement & Concrete Industry Decarbonisation Facilitation Plan	Collaborate with key government & industry stakeholders to deliver the industry objective set by the Decarbonisation Pathways for the Australian Cement and Concrete Sector Report
	Circular economy	Remove barriers for a circular economy
	Codes & Standards	Industry appropriate material specifications
3. RESOURCE ACCESS, SECURITY & EFFICIENT LOGISTICS	Secure resource access to materials	Secure the sustainable supply of heavy construction materials to underpin affordable housing and infrastructure Planning protection for member operations
	Optimise regulatory & cost barriers	Streamline environmental and development approvals processes Facilitate the continuous improvement of HSE issues
	Efficient logistics	An efficient and effective heavy construction materials supply chain

Agenda

- Brian Hauser, State Director NSW/ACT | Director Industry Policy
- Keynote: Marcus Brooks, Robson Environmental
- Panel discussion

  - Marcus Brooks, Robson Environmental
  - Chris Aebi, Boral
  - Stewart Cameron, Hazell Bros
  - Robyn Pass, Holcim

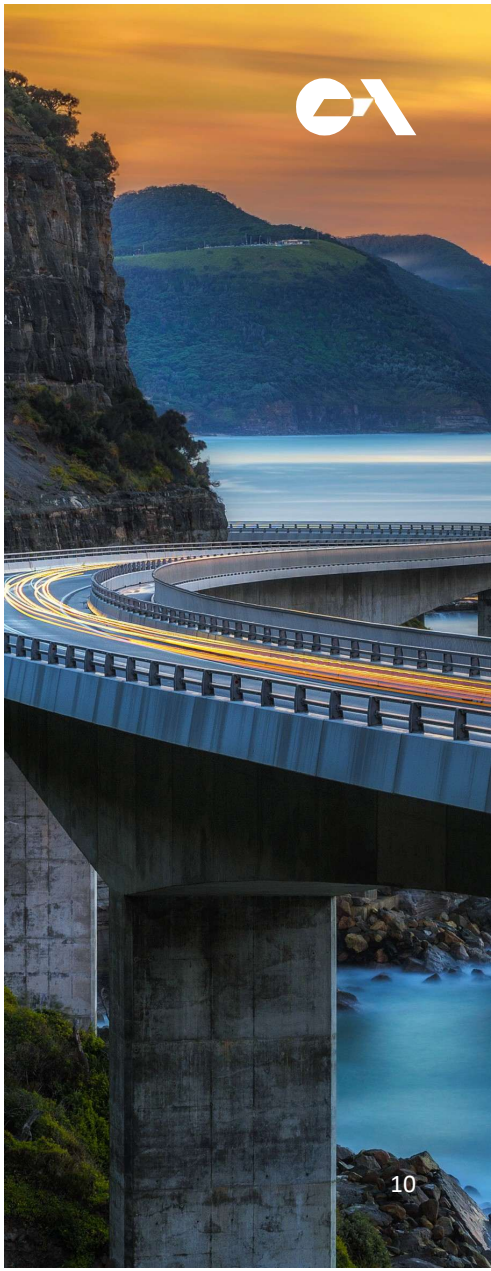
- Q&A
- Close
- Networking – drinks and canapes

Overview

Brian Hauser
State Director, NSW/ACT
Director Industry Policy
CCAA

RCS managing safety compliance

- Safe Work Australia (SWA) implemented a **50% reduction** in the *Workplace Exposure Standard* (WES) for RCS of 0.05 mg/m^3 (2019)
- CCAA was one of the first industries to publish our own risk-based guidance material (July'21)
- We worked closely with Work Safe Victoria to develop regulations and guidance as a template for model WHS regulations.
- CCAA Advocacy has ensured alignment with **product** and **process** separated and a risk-based approach agreed to HRCSP to ensure they don't exceed half the WES.
- Silica Regulations came into effect 1 Sep'24 and SWA published ***Guidance for PCBUs*** (July'24)that also recognise the use of RPE in the HoC

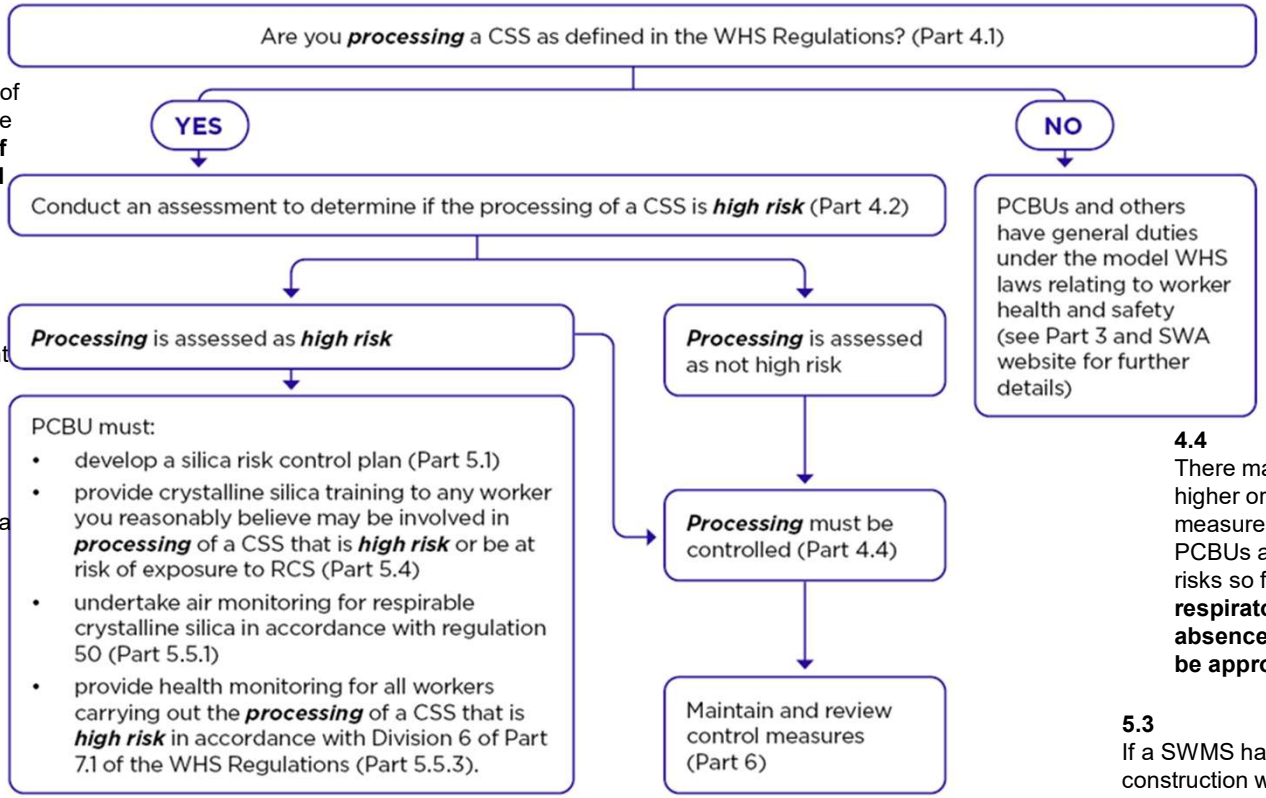


Identifying and managing risks from RCS

4.2 e)
whether the airborne concentration of RCS that is present at the workplace is **reasonably likely to exceed half the workplace exposure standard** (WES),

4.2
…you must assess whether the processing is **high risk** and document this in writing.

If you are unable to determine if the processing is **high *risk***, you must **assume it is high risk** until you are able to determine otherwise, through a subsequent assessment.



which are materials that contain at least 1% crystalline silica.

4.4
There may be some cases where implementing higher order isolation and engineering control measures is not reasonably practicable. Provided PCBUs are fulfilling their primary duty to minimise risks so far as is reasonably practicable, **the use of respiratory protective equipment only, in the absence of higher order control measures, may be appropriate.**

5.3
If a SWMS has been prepared for high-risk construction work that involves processing of a CSS that is high risk, **a silica risk control plan is not needed**, provided the SWMS includes all the information required for a silica risk control plan as outlined in Parts 5.1 and 5.2 of this guide.

RCS advocacy

- CCAA advocated for a RIS on 9 chemicals including RCS (Oct'24)for a further halving of WES/WEL to ensure both health and economic impacts were evaluated prior to regulations coming into effect.
- Analysis separated out mining showing 8:1 cost to benefit.
- CCAA made a submission (NOV'24) NOT SUPPORTING a further halving and wrote to all WHS Ministers.
- Early indications from Ministers and regulators support CCAA's position that better management of RCS can be achieved by investing scarce resources in improved education, controls and monitoring.
- Await decision out of the WHS Ministers meeting

SWA impact analysis

Table 24 - Estimated average annual and total compliance costs to mining businesses affected by the proposed WEL for RCS, FY27 to FY36

Cost category	Average costs p.a. ($ millions, undiscounted)	Total costs ($ millions, discounted)
Control measure costs	**3,033.3**	**18,636.5**
Isolation control costs	0.8	4.7
Engineering control costs	2,553.1	15,563.2
Administrative control costs	444.5	2,731.1
Personal protective equipment costs	54.9	337.4
Management practice costs	**14.3**	**88.1**
Air monitoring costs	13.9	85.3
Occupational hygiene costs	0.5	2.9
Total costs	**3,047.6**	**18,724.6**

ND = Not determined due to insufficient data

Table 26 - Estimated average annual and total benefits of the proposed WEL for respirable crystalline silica for mining, FY27 to FY36

Benefit category	Average benefits p.a. ($'000, undiscounted)	Total benefits ($ millions, discounted)
Direct benefits	**12.1**	**74.8**
Direct compensation benefits	8.0	49.3
Common law compensation benefits	3.0	18.8
Medical compensation benefits	0.3	1.7
Supplementary compensation benefits	0.8	5.0
Health benefits	**384.4**	**2,352.1**
Fatal burden benefits	378.1	2,313.3
Non-fatal burden benefits	6.3	38.7
Indirect benefits	**13.5**	**21.6**
Productivity benefits	13.5	21.6
Benefits	**400.0**	**2,448.4**

The analysis includes an estimation of the costs and benefits of the proposed changes to the WES, based on publicly available information and preliminary stakeholder consultation, which indicate that for:

- respirable crystalline silica (excluding in the mining industry) the *quantified benefits* are greater than the *costs*, and
- all other chemicals and respirable crystalline silica in the mining industry, the *costs* of implementing the proposed changes to the WES are greater than the *quantified benefits*.

RCS guidance and educations

- CCAA Guideline is being reviewed and updated with funding secured from ACCI / Government.
- The guideline will align with the SWA guideline and support education programs and regulators in all jurisdictions.
- CCAA secured gov funding for face-to-face workshop in March 2025

Keynote

Marcus Brooks
Occupational Hygiene Manager
Robson Environmental

Working with crystalline silica substances

Disclaimer

The information contained in this webinar, either expressly or implied, is information material only and does not constitute advice. It is provided in good faith and believed to be reliable and accurate at the time of publication. While the CCAA makes every attempt to ensure the information within this webinar is correct at the time of publication, we do not warrant its completeness or accuracy. This information must be read in conjunction with the appropriate Acts and Regulations.
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Acknowledgement

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Australian Government
Department of Employment and Workplace Relations

Australian Chamber of Commerce and Industry

In this presentation…

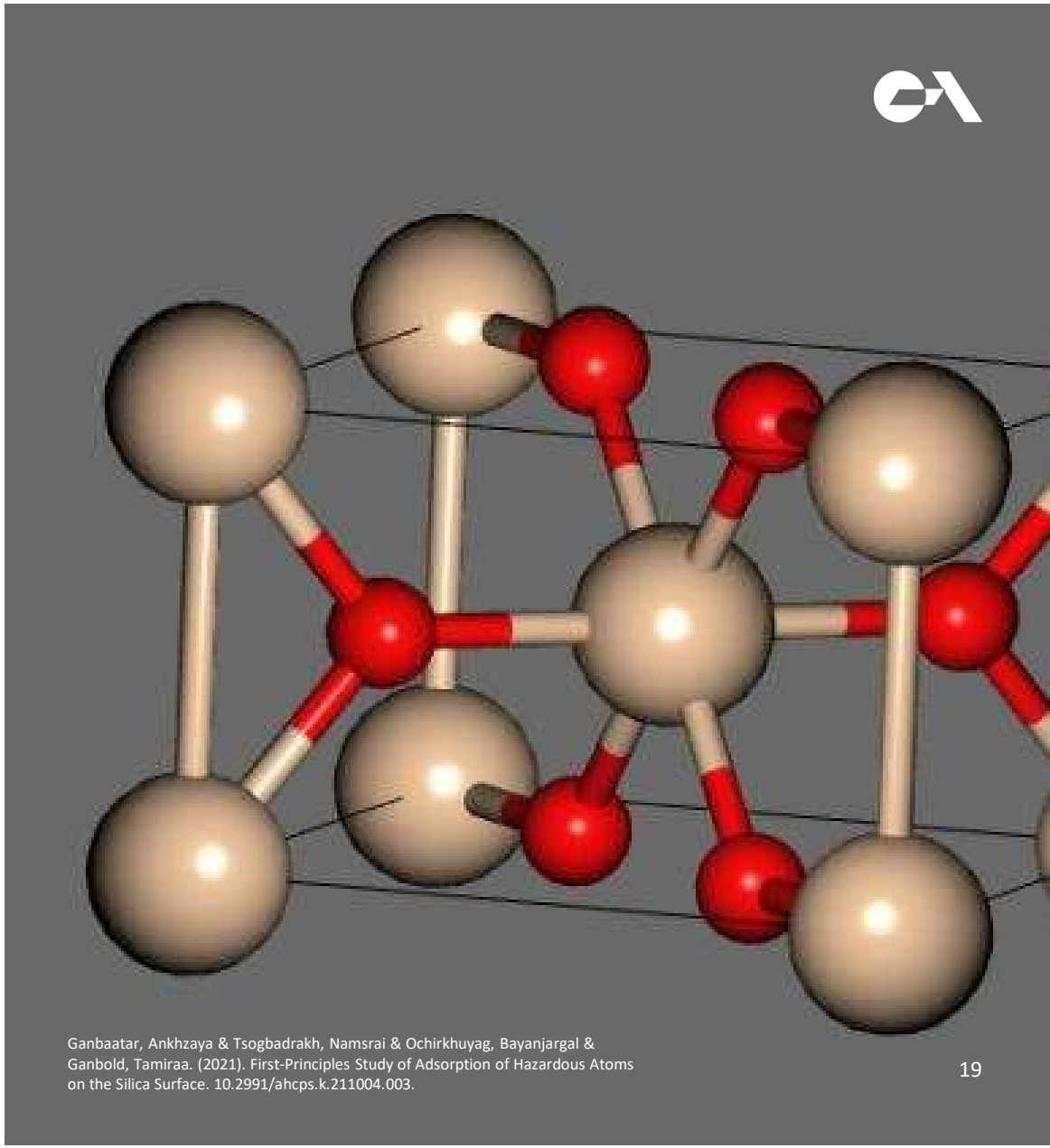
- What is crystalline silica
- What is respirable crystalline silica (RCS)
- What are the health risks
- What is a crystalline silica substance (CSS)
- What is high risk processing of a CSS
- What are the regulatory requirements

This event has been supported through funding from the Australian Government Department of Employment and Workplace Relations.

What is crystalline silica?

Crystalline silica is the crystalline form of silicon dioxide. It is a naturally occurring mineral. It is found in many natural and man-made things:

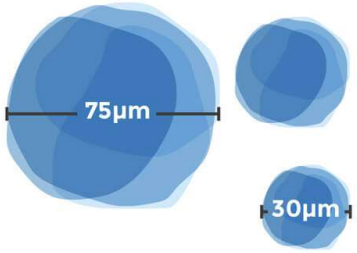
- Rocks
- Soils
- Clay
- Bricks
- Pavers
- Concrete



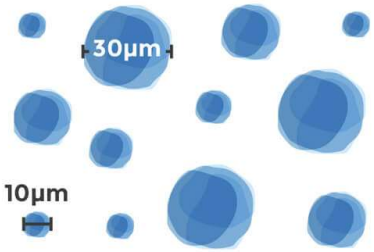
Ganbaatar, Ankhzaya & Tsogbadrakh, Namsrai & Ochirkhuyag, Bayanjargal & Ganbold, Tamiraa. (2021). First-Principles Study of Adsorption of Hazardous Atoms on the Silica Surface. 10.2991/ahcps.k.211004.003.

All airborne particles make up the 'Inhalable fraction'

Largest inhalable particles (30 to 100 microns)



'Thoracic fraction' (up to 30 microns)



'Respirable fraction' (under 10 microns)

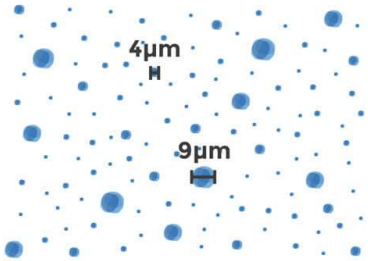
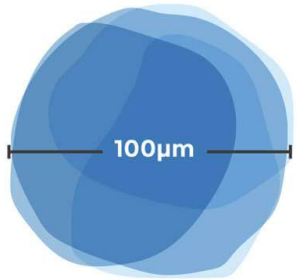


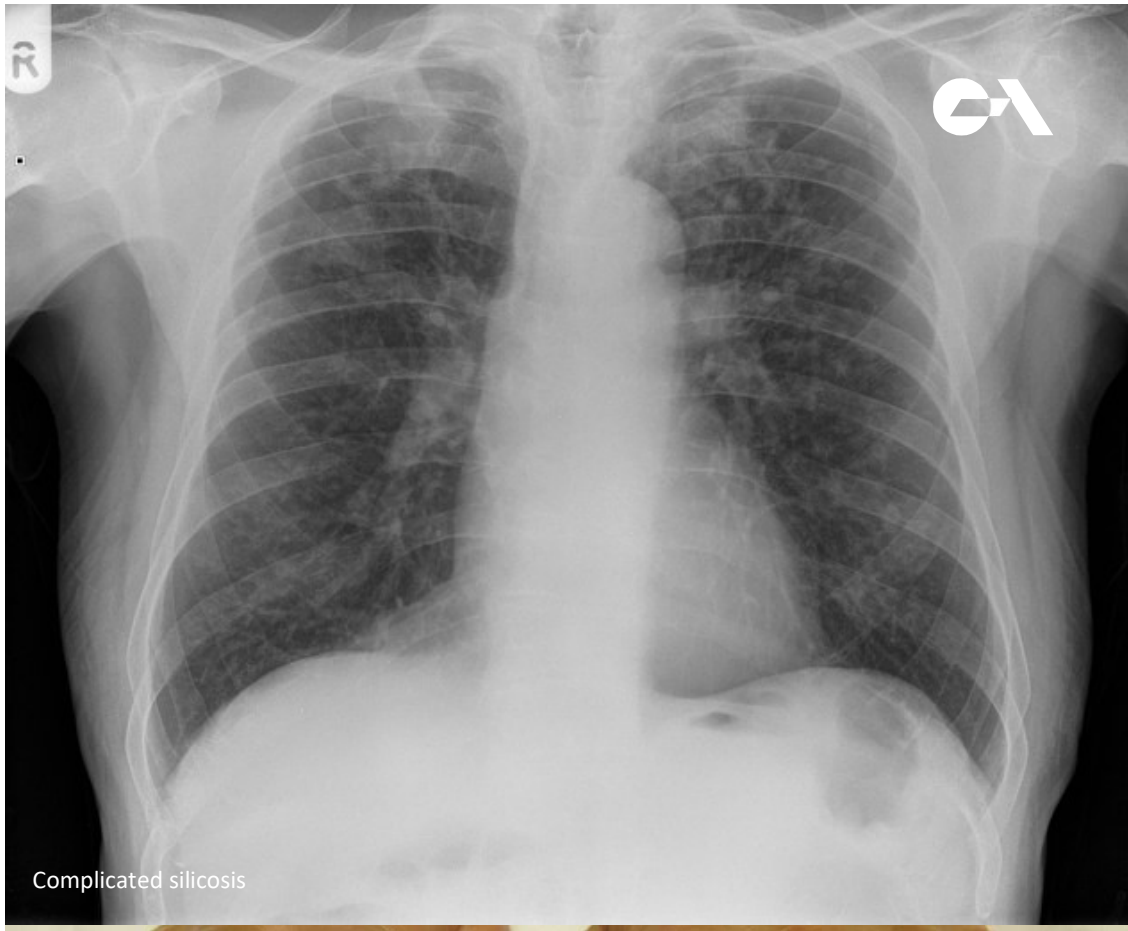
Table salt (100 microns)



What are the health risks?

RCS is only a risk to health when it is airborne and in the breathing zone of a person.
Exposure to airborne RCS can lead to:

- Silicosis
- Lung cancer
- Chronic obstructive pulmonary disease
- Chronic kidney disease
- Auto-immune diseases such as scleroderma



Complicated silicosis


Scleroderma

https://radiopaedia.org/articles/silicosis

https://clinicalconnection.hopkinsmedicine.org/news/scleroderma-lung-disease-the-best-protocol-for-early-detection-and-treatment

What is a crystalline silica substance?

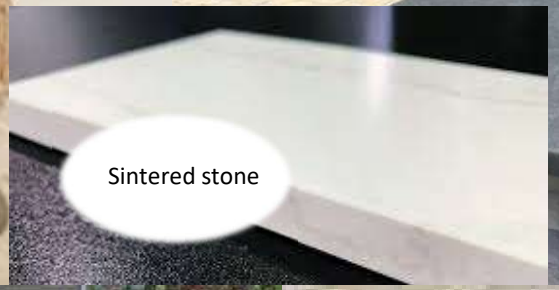
model WHS regulations 529A (2):

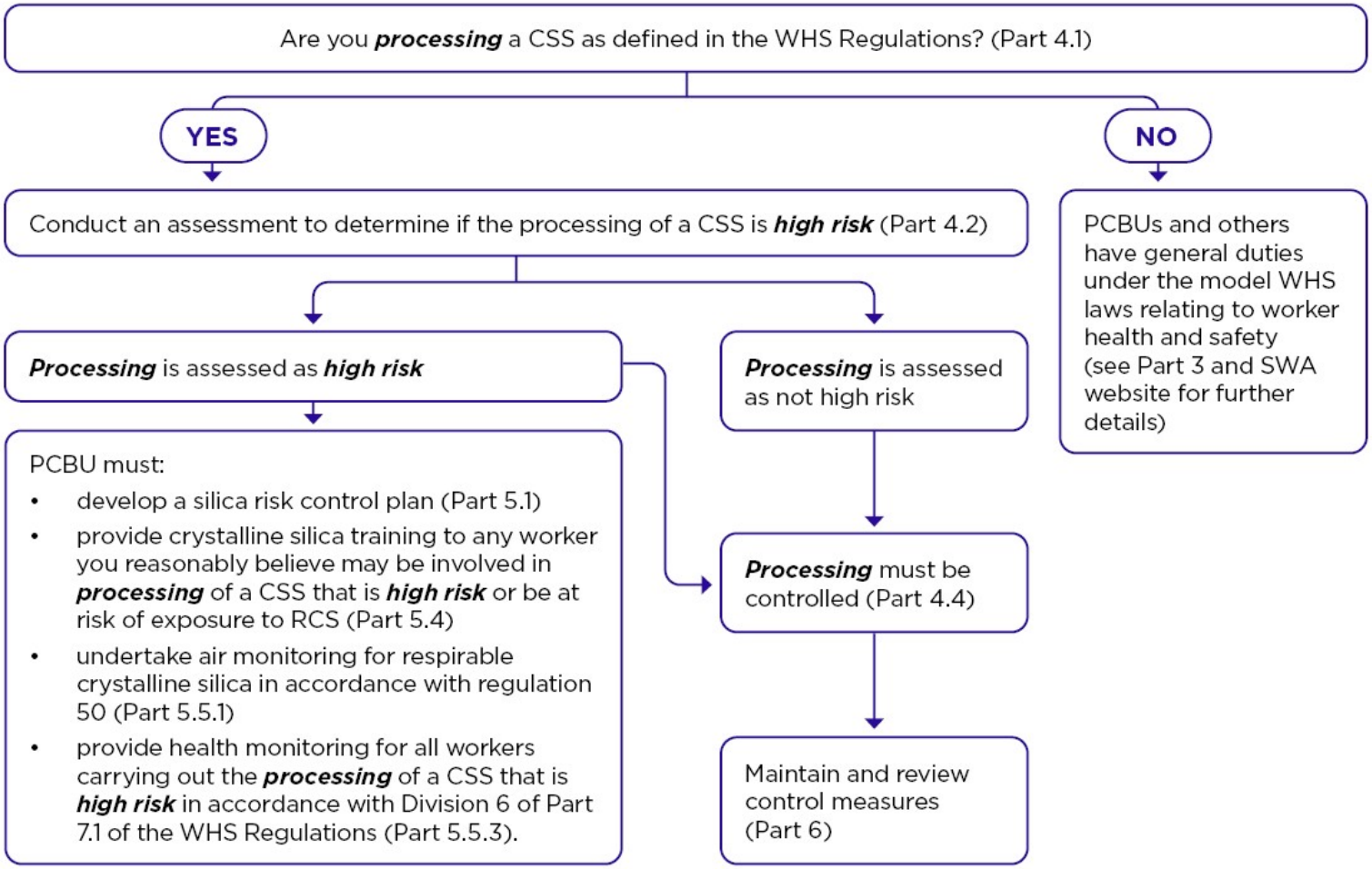
Crystalline silica substance (CSS) means material that contains at least 1% crystalline silica, determined as a weight/weight (w/w) concentration.

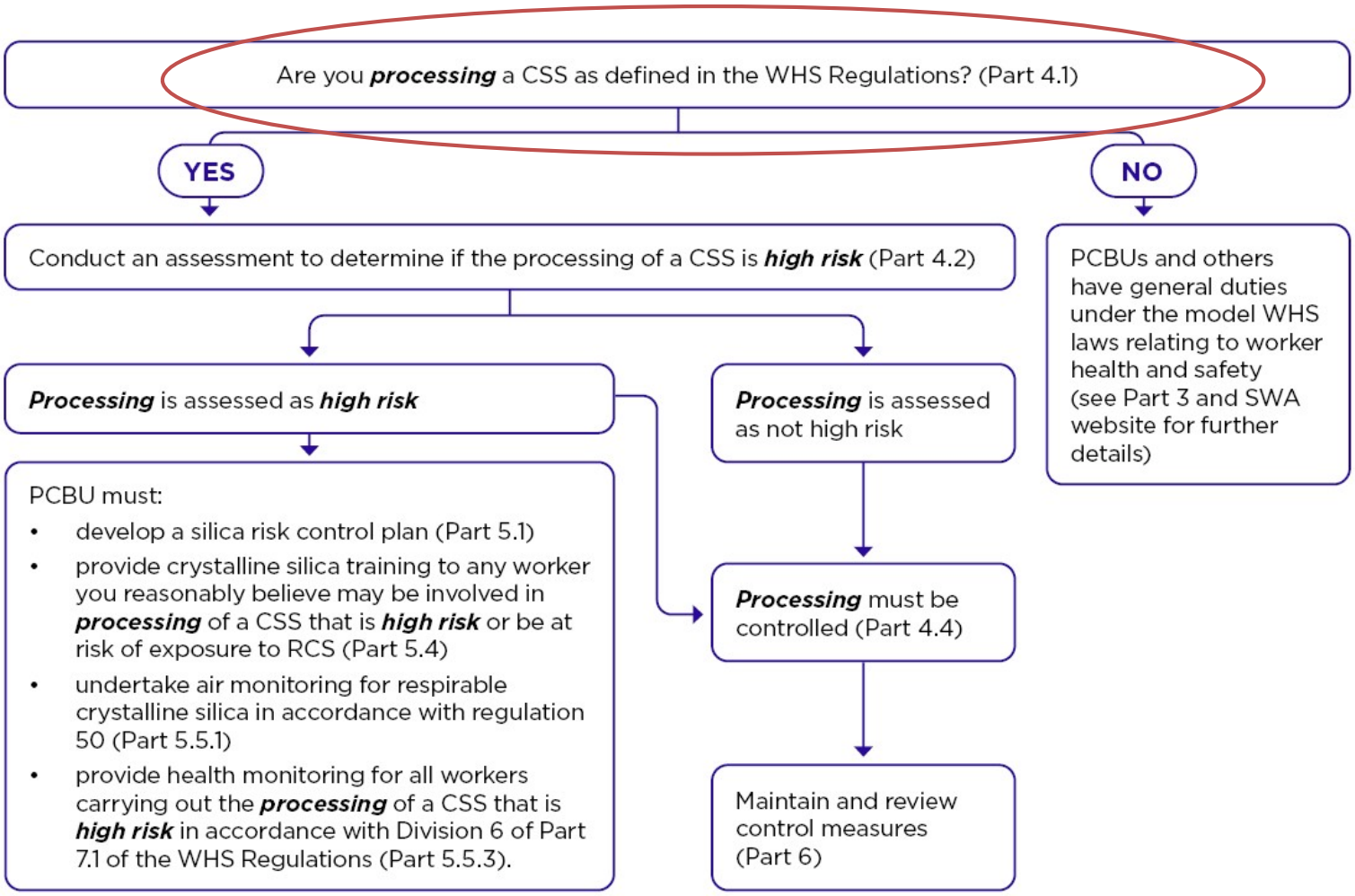
Note: Engineered stone is a type of CSS.

Sample	Dust weight (mg)	RCS (mg)		% concentration
		α-Quartz	Cristobalite	
Product 1	1.46	0.056	<0.01	3.8
Product 2	1.759	<0.5	<0.5	<1.0
Product 3	1.675	<0.5	<0.5	<1.0
Product 4	1.54	0.020	<0.01	1.3

What is a crystalline silica substance?




Are you ***processing*** a CSS as defined in the WHS Regulations? (Part 4.1)
YES
NO
Conduct an assessment to determine if the processing of a CSS is ***high risk*** (Part 4.2)
PCBUs and others have general duties under the model WHS laws relating to worker health and safety (see Part 3 and SWA website for further details)
Processing is assessed as ***high risk***
Processing is assessed as not high risk
PCBU must:
• develop a silica risk control plan (Part 5.1)
• provide crystalline silica training to any worker you reasonably believe may be involved in ***processing*** of a CSS that is ***high risk*** or be at risk of exposure to RCS (Part 5.4)
• undertake air monitoring for respirable crystalline silica in accordance with regulation 50 (Part 5.5.1)
• provide health monitoring for all workers carrying out the ***processing*** of a CSS that is ***high risk*** in accordance with Division 6 of Part 7.1 of the WHS Regulations (Part 5.5.3).
Processing must be controlled (Part 4.4)
Maintain and review control measures (Part 6)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What is processing of a CSS?

What is **‘processing’** a CSS?

1. Using power tools or mechanical equipment that is used to modify a CSS. For example, crushing, cutting, grinding, trimming, sanding, abrasive polishing or drilling.
2. Excavating a CSS using a road header.
3. Quarrying a CSS.
4. Using equipment to screen CSS (mechanical screening).
5. Tunnelling through a CSS.
6. Any other process with a CSS that exposes, or is expected to expose, someone to respirable crystalline silica (RCS).

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What is processing of a CSS?

Regulation 529B:

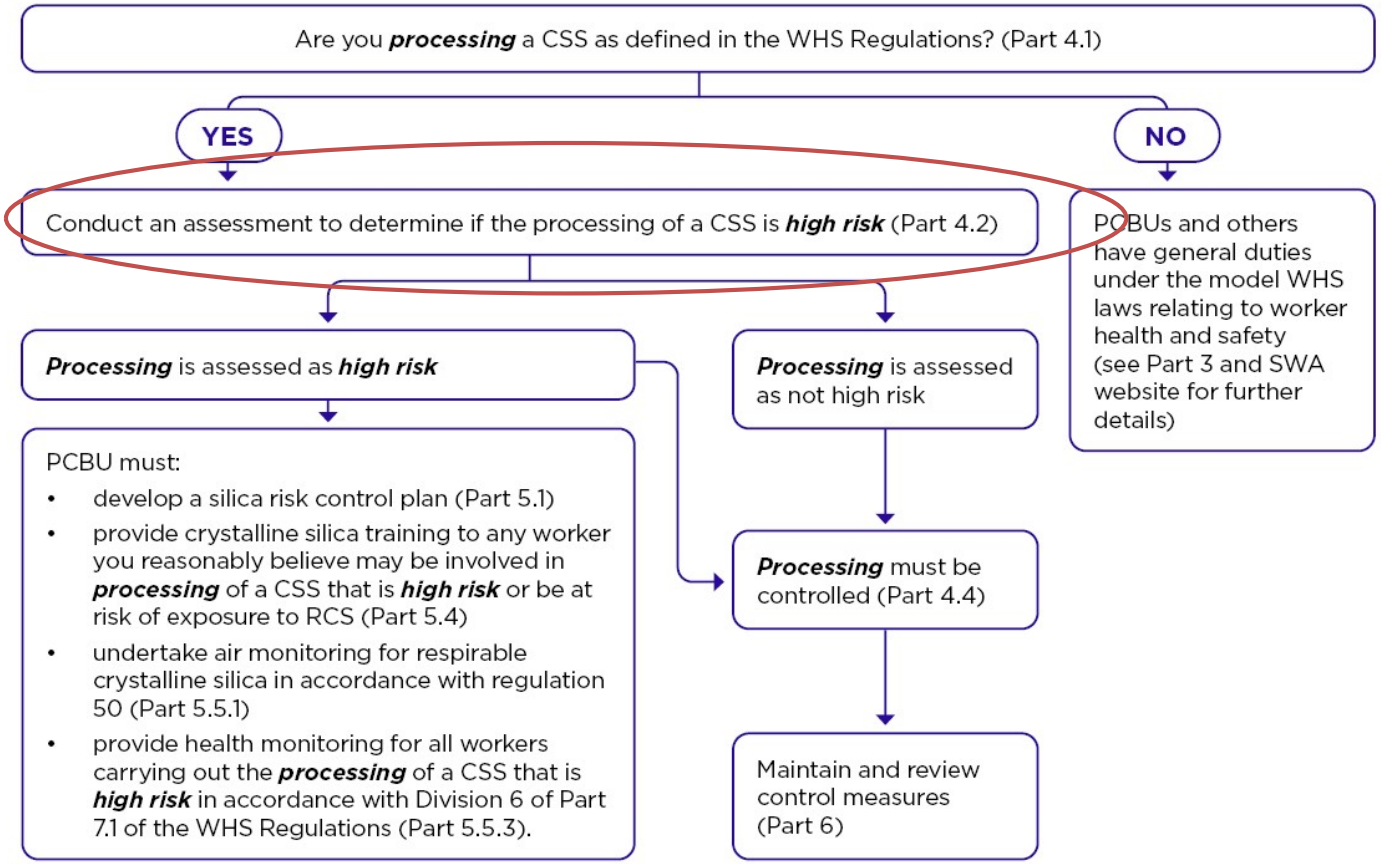
To control a CSS process, risks must be minimised so far as is reasonably practicable and at least 1 of the following measures are used during the processing:

- the isolation of a person from dust exposure
- a fully enclosed operator cabin fitted with a high efficiency air filtration system
- an effective wet dust suppression method, on tool extraction system or local exhaust ventilation system.

If a person is still at risk of being exposed to respirable crystalline silica after 1 or more of the measures are used, then RPE must be provided and worn.

WorkSafe ACT, Safety Poster Series, *Silica control measures*

What is high risk processing of a CSS?



National guidance material: Working with crystalline silica substances, SWA, 2024

What is high risk processing of a CSS?

To make this risk decision, the PCBU must collect and record all the information they have about:

a. the specific processing that will be undertaken

b. the form or forms of crystalline silica present in the CSS

c. the proportion of crystalline silica contained in the CSS, determined as a weight/weight (w/w) concentration

d. the hazards associated with the work, including the likely frequency and duration that a person will be exposed to RCS

e. whether the airborne concentration of RCS that is present at the workplace is reasonably likely to exceed half the workplace exposure standard

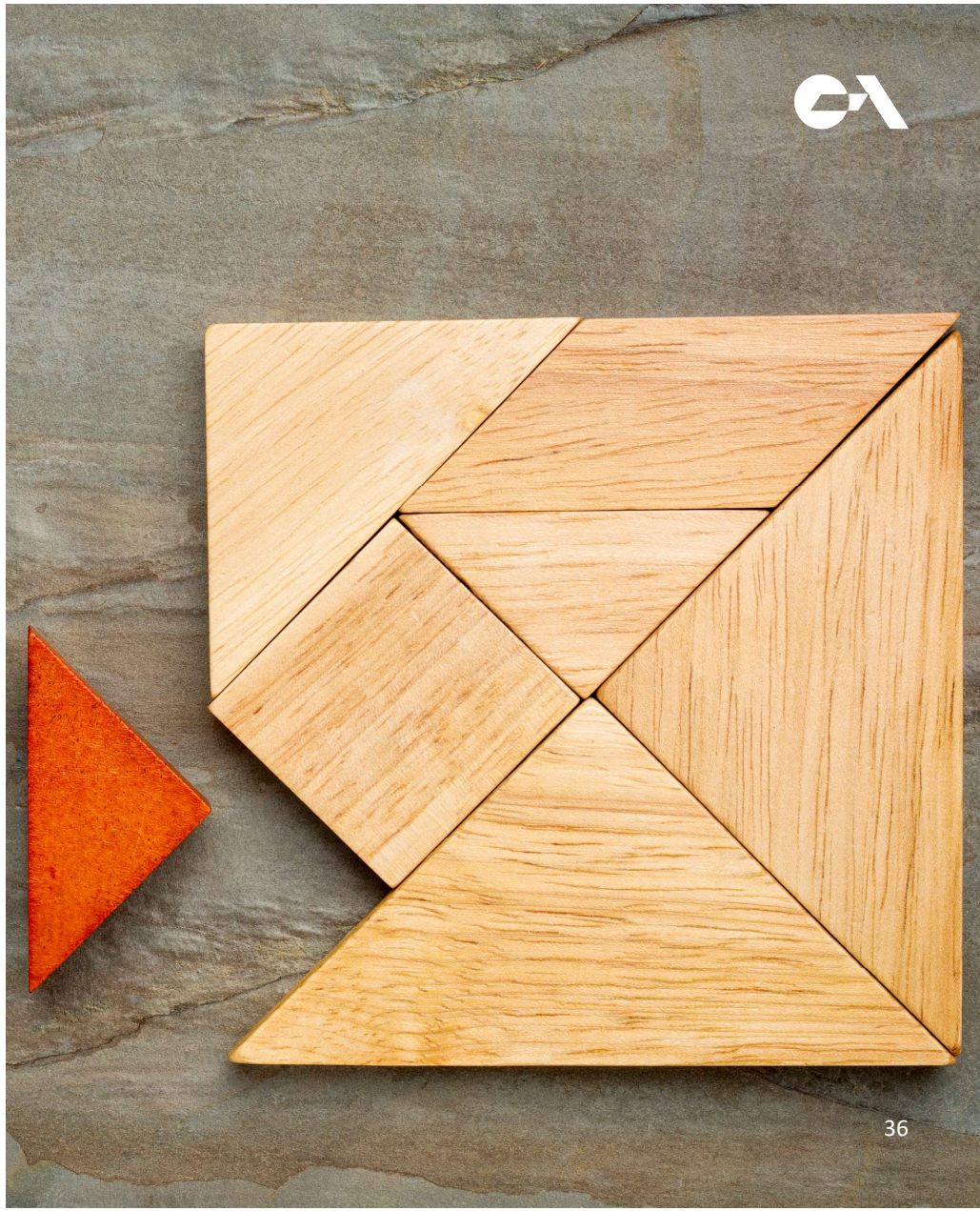
f. any relevant air and health monitoring previously undertaken at the workplace

g. any previous incidents, illnesses or diseases associated with exposure to RCS at the workplace

What is high risk processing of a CSS?

To make this risk decision, the PCBU must not take into account any administrative controls or personal protective equipment that is used by the workers when they are processing a CSS.

This does not mean that you should not use these in your overall combination of control measures for managing RCS.



Collect information about:

The CSS you will be working with including any laboratory reports about the CSS – manufactured/artificial products or mixtures

Information from the supplier or manufacturer such as:

- Product information sheets
- Product flyers
- Safety data sheets (SDS, not always available or high quality)
- Laboratory testing reports

If you or someone else in your trade or industry have conducted any testing on the material

Collect information about:

The CSS you will be working with including any laboratory reports about the CSS – natural stones

Information from the supplier
If you or someone else in your trade or industry have conducted any testing on the material
Any other accessible information, for example from the web

Collect information about:

The tasks you will be doing with the CSS including how many workers and how often the task will be carried out:

- What ‘processing’ will be undertaken?
- How many workers will do the processing?
- How often will it be done?
- For how long?
- How long in between processing tasks?

Collect information about:

The equipment that will be used:

- What types of power tools?
- How fast do they process?
- Do they have on-tool dust extraction?
- Have they been retro-fitted with control measures?
- How old is the equipment?
- Information from the supplier or manufacturer of the tools
  - ➢ Product information sheets
  - ➢ Product testing reports

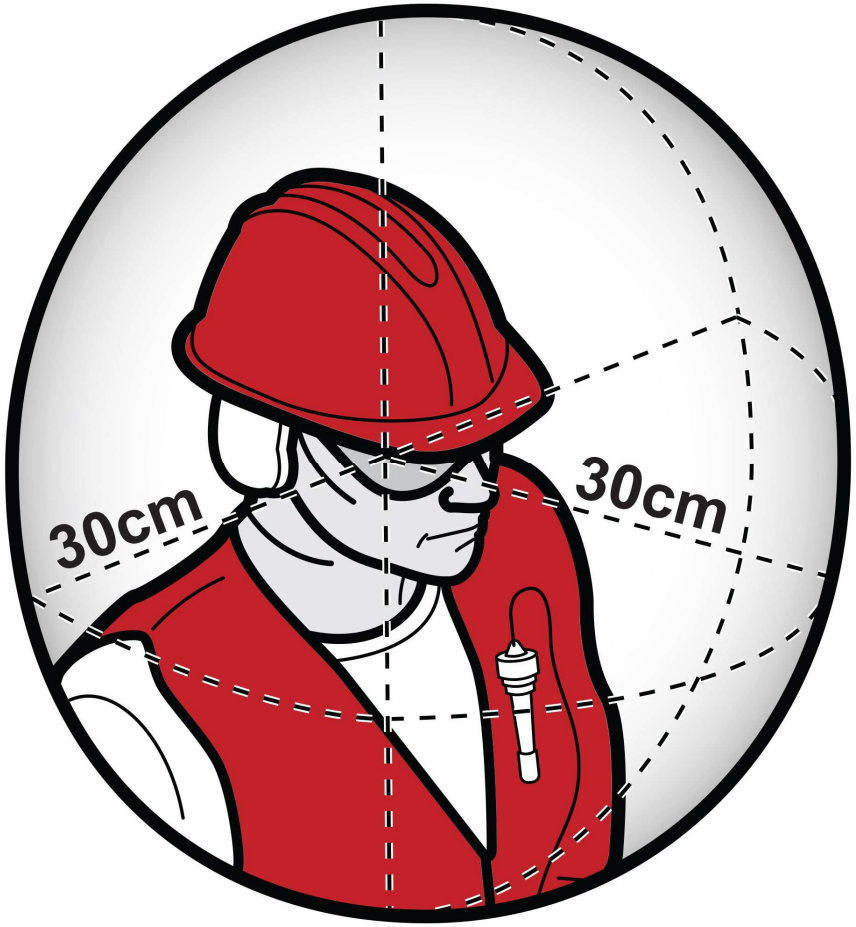
Collect information about:

Any air monitoring or health monitoring reports you have for RCS and silica

- Personal air monitoring
- Static air monitoring
- Needs to be the same CSS and process to be relevant

Any information about silica-related workers' compensation claims

This could also include any incident reports, reports of uncontrolled releases or near misses



Record your information

CSS information

Product or material name	Form(s) of crystalline silica present	Silica content (sourced from SDS or product information)
Name of product or material	Quartz (crystalline silica) Cristobalite (crystalline silica)	Approximate or based on laboratory testing

Information source(s):

List and attach your sources here or include weblinks

Process information

Process	Location	Frequency of the task	Total duration of task for the frequency specified	How many workers conduct this task?	What isolation and engineering controls do you have in place for this task?
Describe the process here	(indoor / outdoor)	Daily Weekly Monthly Intermittent	< 15 mins > 15 mins and <1 hour > 1 hour	Number	Describe any isolation and engineering controls used when processing

Information source(s):

List and attach your sources here or include weblinks

Exposure information

Air monitoring:

Do you have any air monitoring results for completing this task with the CSS?	Are the results below 0.025 mg/m^3?	Are the results between 0.025 and 0.05 mg/m^3?
Yes/No	Yes/ no and result in mg/m^3 or Not applicable	Yes/ no and result in mg/m^3 or Not applicable
Do you have any other air monitoring results? E.g. static/environmental monitoring or from the manufacturer of the equipment or controls	**Are the results below 0.025 mg/m^3?**	**Are the results between 0.025 and 0.05 mg/m^3?**
Yes and describe or No	Yes/ no and result in mg/m^3 or Not applicable	Yes/ no and result in mg/m^3 or Not applicable

Information source(s):

List and attach your sources here or include weblinks

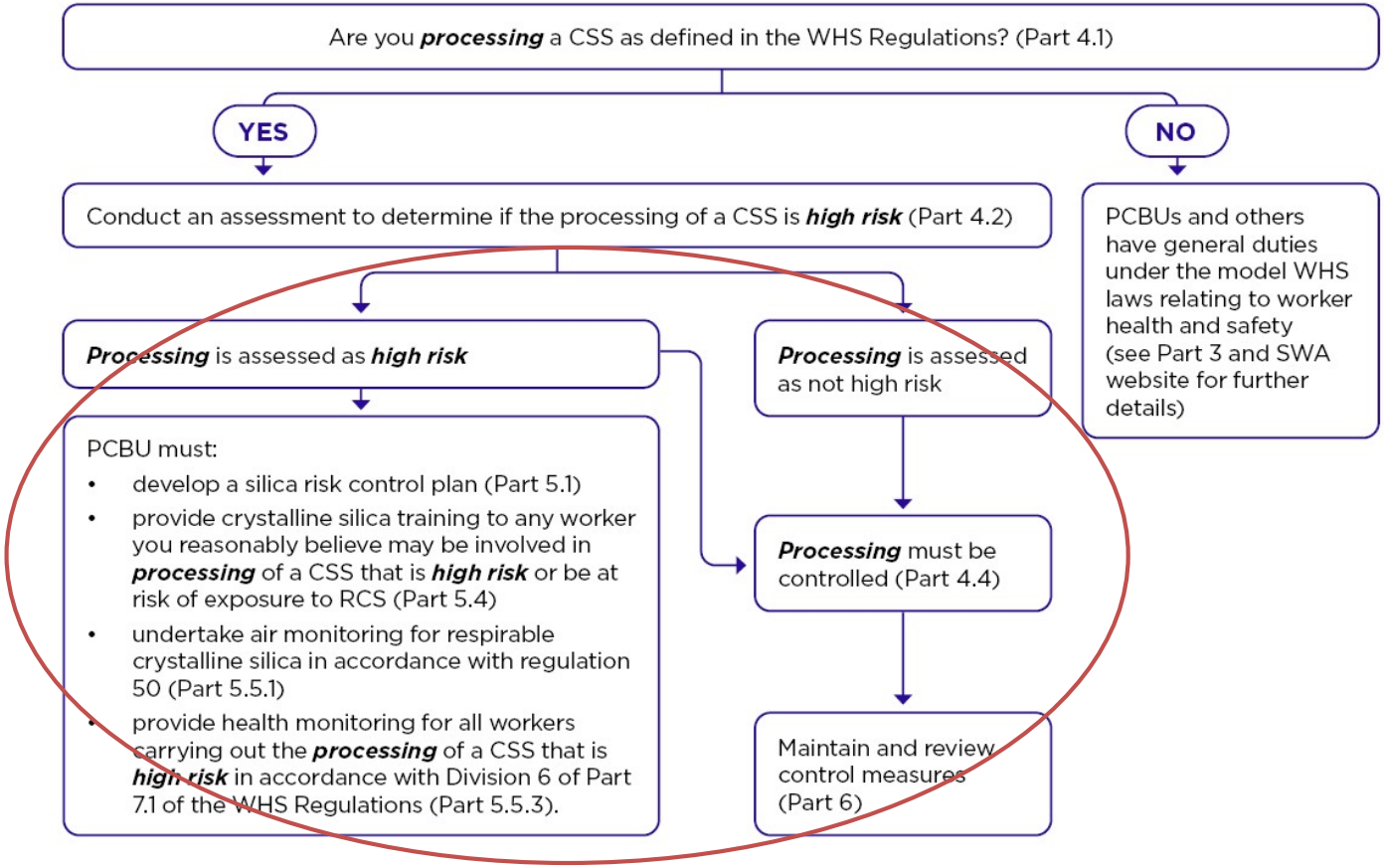
Health monitoring and workers' compensation:

Do you have any health monitoring for completing this task with the CSS?	Do the results indicate silica-related disease?
Yes/No	Describe or Not applicable
Do you have any workers' compensation claims for exposure to RCS from the CSS and task?	**Do you have any other exposure information? For example, reports of uncontrolled exposure or near misses?**
Yes and describe or No	Yes and describe or No

Information source(s):

List and attach your sources here or include weblinks

What is high risk processing of a CSS?



National guidance material: Working with crystalline silica substances, SWA, 2024

Once your decision is made…

HIGH RISK PROCESSING – IMMEDIATE ACTIONS

There are some immediate actions you should take if you have made the decision that the processing you do is high risk.

These actions could include:

- Ensuring the risk of exposure to silica dust is **minimised using a combination of controls** and if there is a residual risk of exposure, ensuring suitable PPE is provided to workers
    - Regulation 529B specifies control measures that must be used and when respiratory protection must be provided
- Conducting **air monitoring** if you are unsure if you are exceeding the workplace exposure standard, and
- Organising a **health monitoring** appointment or health monitoring program for your workers.

Once your decision is made…

HIGH RISK PROCESSING – ADDITIONAL REGULATORY REQUIREMENTS

- Developing and implementing a **silica risk control plan**
- Developing a Safe Work Method Statement (SWMS) if the processing is also ‘construction work’
- Providing **nationally accredited training** for any worker involved in the processing
- **Reporting air monitoring** results to the WHS regulator within 14 days of receiving a report that shows the WES was exceeded.

While not additional duties, you may also need to conduct air monitoring of your workers undertaking high risk CSS processing and provide health monitoring for those workers where there is a risk to their health from ongoing high risk CSS processing.

Working with crystalline silica substances resources

Best reference (references legislation): Work Safe Australia. (2024). Working with crystalline silica substances Guidance for PCBUs. https://www.safeworkaustralia.gov.au/sites/default/files/2024-12/working-with-crystalline-silica-substances-guidance_dec2024.pdf

Panel session

- **Marcus Brooks**, Robson Environmental
  Occupational Hygiene Manager
- **Chris Aebi**, Boral
  National Health & Hygiene Manager
- **Stewart Cameron**, Hazell Bros
  General Manager, HSEQ & Qualtech
- **Robyn Pass,** Holcim
  Senior Advisor Industrial Hygiene

Close

Brian Hauser
State Director, NSW/ACT
Director Industry Policy
CCAA

Thank you

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