

Silica dust compliance

What do you need to do?

Small Mines Roadshow

February/March/April 2026



Content

Regulations

- WHS & WHS MPS Regulations –how does it fit together?
- High risk CSS processing, RCS is a hazard? –how do you decide?
- Silica personal monitoring obligations
- What do the results mean? How to deal with an exceedance
- Silica health monitoring obligations
- Silica worker register
- Silica control plan

Resources

- Resources to use

Silica dust compliance

Regulations

1



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AUSTRALIAN
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HYGIENISTS

WORKPLACE EXPOSURE STANDARDS

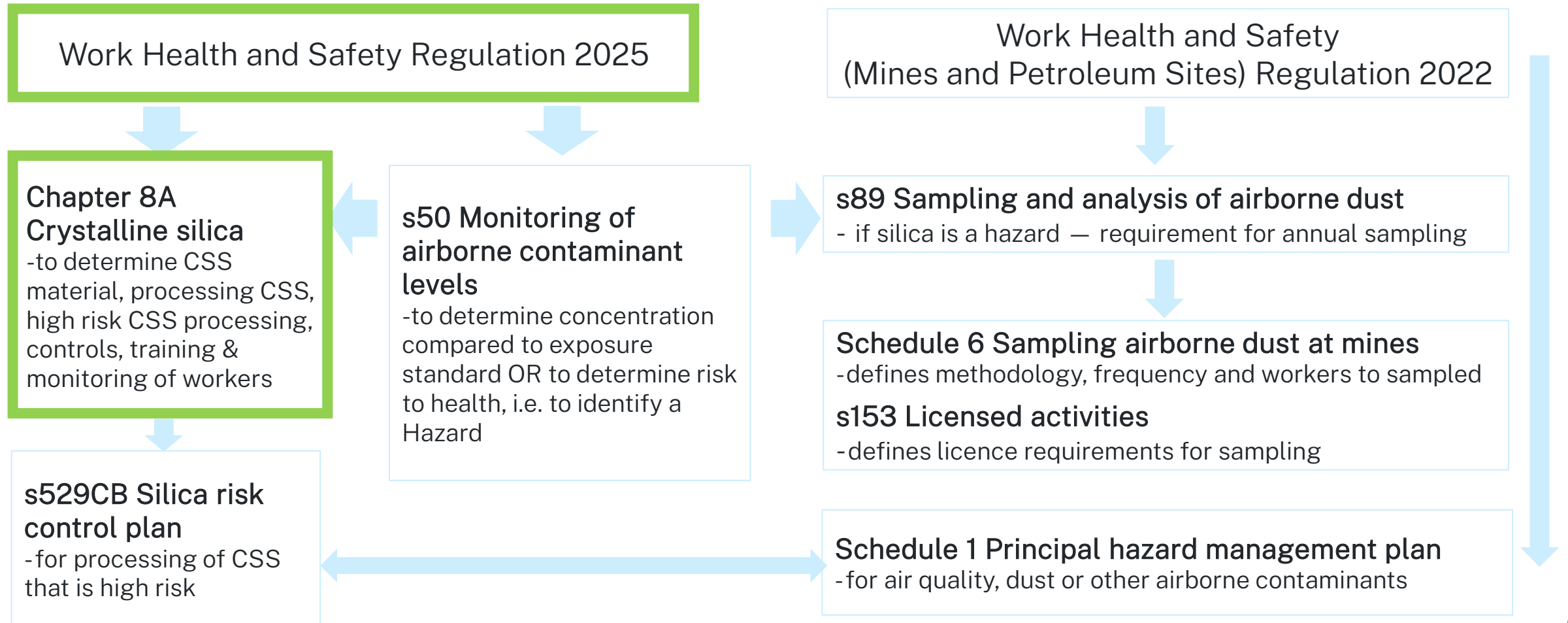
WHAT IS RESPIRABLE CRYSTALLINE SILICA (RCS)?

MEDIA HUB

VIDEO SERIES 2023

WHS & MPS Regulations – how does it fit together?

The WHS and WHS MPS Regulations work together, and both have to be complied with:



WHS Silica Regulations – questions for your site

Question	Details
Does your site have or use any Crystalline Silica Substances (CSS)?	• Undertake petrographic analysis to determine silica content as a percentage • CSS is anything >1% silica (determined as a w/w concentration)
Does your site process a CSS?	• Processing includes extraction, drilling, blasting, digging, crushing, screening, loading, excavation, transporting etc.
Is the processing of CSS High Risk?	• Depends on silica content, worker exposure (duration & frequency), processing activities undertaken, previous monitoring results. • If unsure or unable to determine, the process is 'high risk' • Controls must NOT be considered in the determination

The answers to these questions will determine if your site needs to:

- Provide worker training in CSS (WHS Regs s529CD)
- Undertake health monitoring of workers (WHS Regs s529CE)
- Implement a silica risk control plan (Tier 3) or update Airborne Contaminants PHMP (Tiers 1 & 2) (WHS Regs s529CB)

WHS Silica Regulations – determining ‘high risk’

Mine operators must decide if the CSS processing activities are high risk

SWA - Working with crystalline silica substances. Guidance for PCBUs
(July 2024):

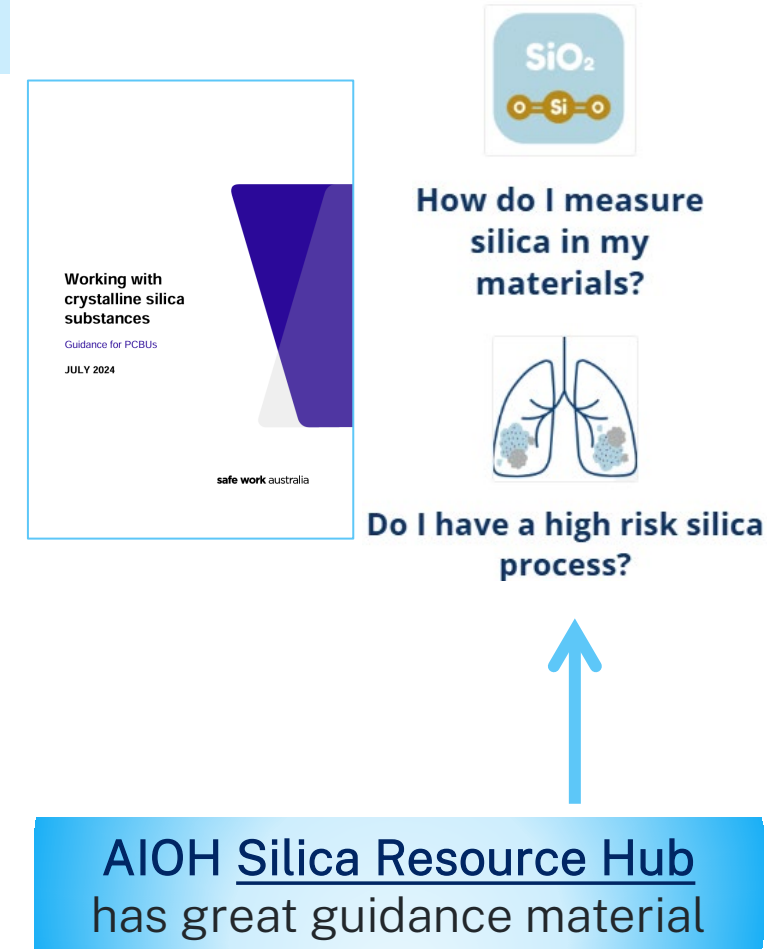
- Provides guidance on determining if processing of CSS is ‘high risk’
- Many factors need to be considered (frequency, duration etc)

Example: there is a different risk associated with loading CSS material at a site for 2 hours, several times per month vs loading CSS material at a site for 8hrs/day, 5 days per week.

- If your site is undertaking:

drilling	excavating	conveying	maintenance
blasting	loading	crushing	housekeeping
digging	transporting	screening	any quarrying

it is high likely that you are creating *respirable crystalline silica* in parts of your operation, and the process is therefore likely to be high risk.



Working with crystalline silica substances
Guidance for PCBUs
JULY 2024
safe work australia

SiO_2

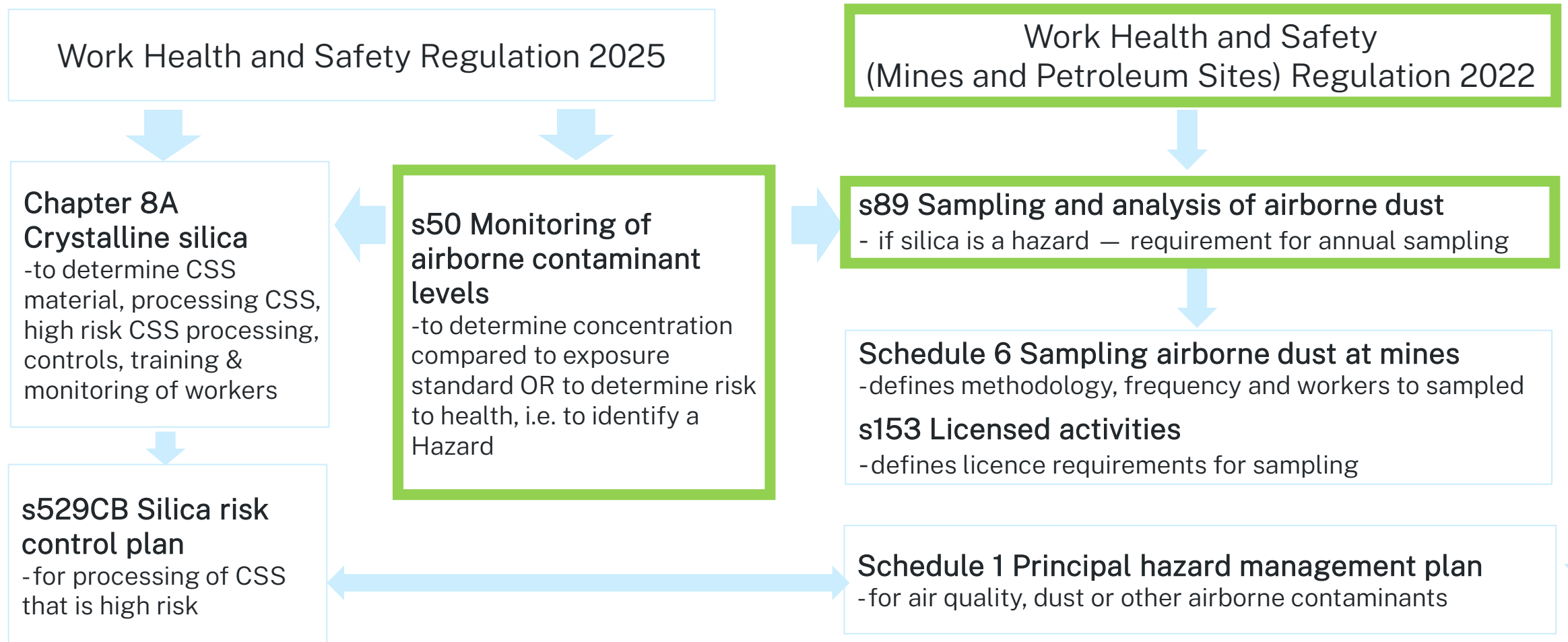
How do I measure silica in my materials?

Do I have a high risk silica process?

AIOH Silica Resource Hub
has great guidance material

WHS & MPS Regulations –how does it fit together?

The WHS and WHS MPS Regulations work together, and both have to be complied with:



WHS MPS determining if silica is a 'hazard'

Mine operators must also determine if silica is a hazard under WHS (MPS) s89

The answer to this question will determine if your site needs to undertake annual exposure monitoring of workers under WHS MPS Regs s89.

The way some organisations determine the hazard is by a qualitative assessment of data for the site. The hygienist would consider these things:

- Petrograph analysis to determine silica content (>1% silica, a hazard exists)
- Exposure time of workers
- Quarrying methods used
- Dust sampling results (from s50 WHS Regulation)

Note: even if exposure monitoring indicates a low concentration, it may still be a hazard you need to manage.

A competent occupational hygienist needs to interpret the results using the methodology outlined in the *TRG: Monitoring and control of worker exposure to airborne dust*.

If you have identified high risk silica processing at your site (as per previous slide) then it is a hazard.



WHS Regs and WHS (MPS) Regulations - determinations using the decision tool

Scenario: Sand dredge

Material – river sand. Silica content 60-70%

Work hours – 8hrs/day, 5 days per week

Activities – dredging, washing and loading sand

Previous monitoring – results show very low silica

	Legislation	Questions	Result (Yes / No)	Details	Answer for this scenario		
1	WHSR s50	Has workplace air monitoring been undertaken at the site?	Yes	To establish concentration of RD, RCS and INH where there is uncertainty.	Yes - Results indicate nil RCS, low RD		
2		Has the site undertaken analysis to determine content of silica? (e.g. Petrographic analysis?)	Yes	All product material used and introduced to site should be tested to determine the silica content as a weight/weight concentration. The results of this testing is then used to determine if a site processes a CSS, and if the processing of CSS is High Risk.	Yes - testing of all materials completed		
3	WHSR 529A	Does the site use any material that is classified as a CSS substance?	Yes	A CSS is a material which contains >1% silica determined as a w/w concentration.	Yes - river sand silica percentage of materials at site are 60-70% w/w		
4	WHSR 529A	Does the site undertake processing of a CSS?	Yes	Select Yes if the site undertakes quarrying processes, AND the material testing (Petrographic) results indicate the material contains >1% silica as w/w?	Yes - the site does undertake quarrying processes (washing and loading), and the silica percentage of materials at site are 60-70% w/w.		
5	WHSR 529CA	Is processing of CSS 'high risk'? "The processing of a CSS that is reasonably likely to result in a risk to the health of a person at the workplace".	Yes	Need to consider the following (with Hygienist). Consider WITHOUT use of controls or RPE		Decision Result = HIGH workers exposed 8hrs/day, 5 days/week to silica >30% monitoring results are low, but only two samples have been taken (not representative of day in day out circumstances).	
				What is silica content of material			60-70%
				What are hours of exposure per month			160hrs/mth
				Do workers also works at other sites with silica?			No
				Is exposure (air monitoring) data available?			Yes
				Number of personal samples taken			2
				Highest measured silica concentration (mg/m ³)			0.001
				Any previous lung dust disease cases for the site?			No

WHS Regs and WHS (MPS) Regulations - actions using decision tool

Scenario: Sand dredge

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Work hours –8hrs/day, 5 days per week

Activities –dredging, washing and loading sand

Previous monitoring –results show very low silica

	Legislation	Questions	Result (Yes / No)	Details	Answer for this scenario
6	WHS(MPS)R s27	Are Airborne Contaminants considered a Principal Hazard at the site?	Yes	If airborne contaminants are identified as a principal hazard, AND high risk CSS process is occurring, we need to make sure the site has this documented in AC PHMP or SSMS. If Yes - For T1 & T2 quarries refer to Q7. For T3 quarries refer Q8. If No - enter NA	Yes, site has an AC PHMCP
7	WHSR 529CB	Does the Airborne Contaminants PHMP need to include silica control components as per 529CB?	Yes	Required when processing is High Risk at sites which have an Airborne Contaminants PHMP (i.e. applies to T2 and T3 quarries)	Yes required, processes (washing/loading) are High Risk
8	WHSR 529CB	For Tier 3 quarries, does the Site Safety Management System incorporate silica control components? (e.g.	Yes	Required when a T3 quarry is processing CSS which is High Risk. e.g. Risk Assessment which incorporates the SW NSW Silica Risk Control Plan template.	Yes required, process is High Risk
9	WHSR 529CD	Is training of workers required?	Yes	Required when processing of CSS is High Risk	Yes required, process is High Risk
10	WHSR 529CE	Is monitoring in accordance with s50 required?	Yes	Required if CSS processing is High Risk (if not already undertaken).	Yes required, process is High Risk
11	WHS(MPS)s89	Has RCS been identified as a 'hazard' based on WHSR s50 air monitoring?	Yes	Silica is identified as a "hazard" if monitoring results are > half of WES	Previous results indicate RCS < detection limit, therefore silica was not identified as a hazard, however, it has been determined to be High Risk, so it is now automatically a "hazard".
12	WHS(MPS)R s89 /Schedule 6	Is ongoing monitoring of RCS required?	Yes	If CSS processing is High Risk, OR Silica is a Hazard at site.	Yes required
13	WHS(MPS)s89	Is a Licenced dust sampling provider required?	Yes	Required for sampling when Silica has been identified as a "hazard"	Yes required
14	WHSR 368 / WHSR 529CE	Is there a duty to provide health monitoring? (if CSS processing is high risk OR there is a significant risk to health)	Yes	Health monitoring of workers (chest x-ray, spirometry etc) is required if processing of a CSS is high risk, OR there is a 'significant risk' to health from silica at the site.	Yes required

WHS Regs and WHS (MPS) Regulations - determinations using the decision tool

Scenario: Multiple borrow pits (stockpiles)

Material – argillite. Silica content 40%

Work hours – 8hrs/day, 1 days per month

Activities – load out of stockpile (no active drill, blast, crush, screen)

Previous monitoring – results show very low silica

	Legislation	Questions	Result (Yes / No)	Details	Answer for this scenario	
1	WHSR s50	Has workplace air monitoring been undertaken at the site?	Yes	To establish concentration of RD, RCS and INH where there is uncertainty.	Yes - Results indicate nil RCS, low RD	
2		Has the site undertaken analysis to determine content of silica? (e.g. Petrographic analysis?)	Yes	All product material used and introduced to site should be tested to determine the silica content as a weight/weight concentration. The results of this testing is then used to determine if a site processes a CSS, and if the processing of CSS is High Risk.	Yes - testing of all materials completed	
3	WHSR 529A	Does the site use any material that is classified as a CSS substance?	Yes	A CSS is a material which contains >1% silica determined as a w/w concentration.	Yes - argellite silica percentage of materials at site are 40% w/w	
4	WHSR 529A	Does the site undertake processing of a CSS?	Yes	Select Yes if the site undertakes quarrying processes, AND the material testing (Petrographic) results indicate the material contains >1% silica as w/w?	Yes - the site does undertake quarrying processes (load out with loader / excavator & truck), and the silica percentage of materials at site are 40% w/w.	
5	WHSR 529CA	Is processing of CSS 'high risk'? "The processing of a CSS that is reasonably likely to result in a risk to the health of a person at the workplace".	No	Need to consider the following (with Hygienist). Consider WITHOUT use of controls or RPE		Decision Result = LOW The workers only work at ONE site, for 8hrs during the month This assessment only relates to the processing activities of loading out. A Seperate assessment is required for Blasting activities (drill, blast, crushing, screening) when they are undertaken.
				What is silica content of material	40%	
				What are hours of exposure per month	8hrs/mth	
				Do workers also works at other sites with silica?	No	
				Is exposure (air monitoring) data available?	Yes	
				Number of personal samples taken	2	
				Highest measured silica concentration (mg/m ³)	0.001	
				Any previous lung dust disease cases for the site?	No	

WHS Regs and WHS (MPS) Regulations - actions using decision tool

Scenario: Multiple borrow pits (stockpiles)

Material – agrellite. Silica content 40%

Work hours – 8hrs/day, 1 day per month

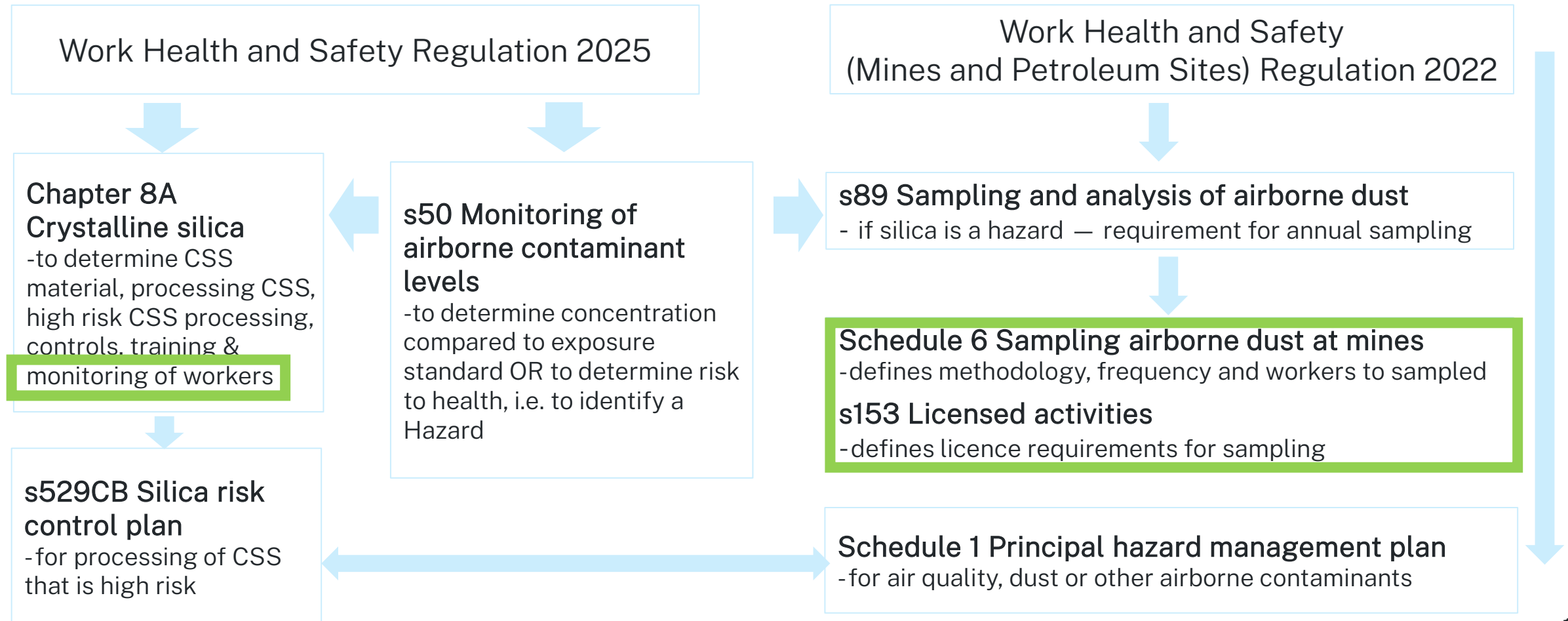
Activities – load out of stockpile (no active drill, blast, crush, screen)

Previous monitoring – results show very low silica

	Legislation	Questions	Result (Yes / No)	Details	Answer for this scenario
6	WHS(MPS)R s27	Are Airborne Contaminants considered a Principal Hazard at the site?	NA	If airborne contaminants are identified as a principal hazard, AND high risk CSS process is occurring, we need to make sure the site has this documented in AC PHMP or SSMS. If Yes - For T1 & T2 quarries refer to Q7. For T3 quarries refer Q8. If No - enter NA	No, site does not have an AC PHMCP
7	WHSR 529CB	Does the Airborne Contaminants PHMP need to include silica control components as per 529CB?	No	Required when processing is High Risk at sites which have an Airborne Contaminants PHMP (i.e. applies to T2 and T3 quarries)	Not required, processes are not High Risk
8	WHSR 529CB	For Tier 3 quarries, does the Site Safety Management System incorporate silica control components? (e.g. SWA Simplified Silica Risk Control Plan template)	No	Required when a T3 quarry is processing CSS which is High Risk. e.g. Risk Assessment which incorporates the SW NSW Silica Risk Control Plan template.	Not required, processes are not High Risk
9	WHSR 529CD	Is training of workers required?	No	Required when processing of CSS is High Risk	Not required, processes are not High Risk
10	WHSR 529CE	Is monitoring in accordance with s50 required?	No	Required if CSS processing is High Risk (if not already undertaken).	Not required, processes are not High Risk
11	WHS(MPS)s89	Has RCS been identified as a 'hazard' based on WHSR s50 air monitoring?	No	Silica is identified as a "hazard" if monitoring results are > half of WES	Previous results indicate RCS < detection limit, therefore silica was not identified as a hazard, and the process is not High Risk
12	WHS(MPS)R s89 / Schedule 6	Is ongoing monitoring of RCS required?	No	If CSS processing is High Risk, OR Silica is a Hazard at site.	Not required
13	WHS(MPS)s89	Is a Licenced dust sampling provider required?	No	Required for sampling when Silica has been identified as a "hazard"	Not required
14	WHSR 368 / WHSR 529CE	Is there a duty to provide health monitoring? (if CSS processing is high risk OR there is a significant risk to health)	No	Health monitoring of workers (chest x-ray, spirometry etc) is required if processing of a CSS is high risk, OR there is a 'significant risk' to health from silica at the site.	Not required

WHS & MPS Regulations –how does it fit together?

The WHS and WHS MPS Regulations work together, and both have to be complied with:



WHS & WHS MPS monitoring obligations

Personal exposure monitoring:

- ⇒ Required for processing of CSS that is high risk, as per WHS Reg s529CE and s50.
- ⇒ Required annually if RCS is identified as a hazard, as per s89 WHS (MPS) Reg Schedule 6, using a licensed provider

[List of Licenced providers](#)

AIOH has the following useful resources:



What do I need to know
about air monitoring?



How do I find an expert in
silica?

Remember – real time
monitors **CAN NOT**
be used to do this
monitoring



www.aioh.org.au/resources/silica-resource-hub

WHS & WHS MPS monitoring obligations

Personal exposure monitoring:

⇒ Required annually if RCS is identified as a hazard, as per s89 WHS (MPS) Reg Schedule 6, using a licensed provider

Scenario:

What if I have several small sites that are only worked intermittently? Does each site need to be monitored on annual basis?

Regulator Position:

If you have many small sites, which are worked infrequently, and the same equipment is used (transported from site to site).....

You only need to monitor the workers at ONE site, per year.

Choose the site which has the highest silica exposure risk, then the next year, undertake monitoring at the site with the next highest risk, and so on.



WHS & WHS MPS silica monitoring obligations

Personal exposure monitoring:

What do the results mean?

Results are in mg/m^3 and can be compared to the current Workplace Exposure Standard of $0.05\text{mg}/\text{m}^3$

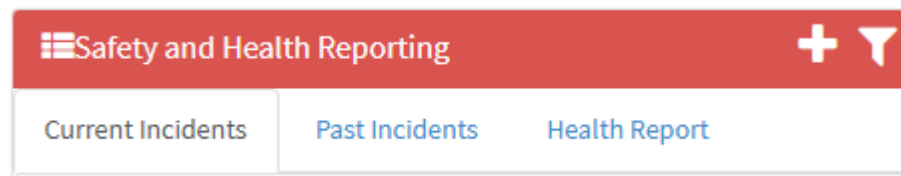
*But..... on December 1st 2026, the exposure standard is likely to be halved, to **$0.025\text{mg}/\text{m}^3$***

What should you do to prepare?

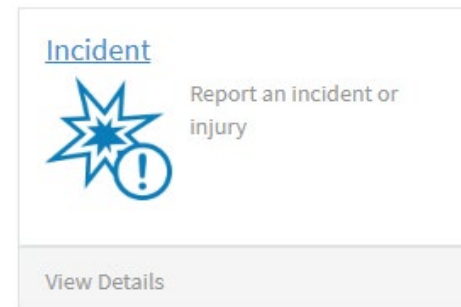
- ⇒ Start looking at your results NOW.
- ⇒ Undertake an investigation for any results that are $>0.025\text{mg}/\text{m}^3$ to see why the levels were high and if further controls can be implemented.

What if you have an exceedance of the exposure standard?

- ⇒ Investigate the cause and Review the control measures in place and in your Control Plans. Implement or adjust controls.
- ⇒ Report the exceedance to the Regulator via the Portal
- ⇒ Re-test to see if implemented controls are working



The screenshot shows the 'Safety and Health Reporting' header in a red bar with a plus icon and a filter icon. Below the header are three tabs: 'Current Incidents', 'Past Incidents', and 'Health Report'.



The screenshot shows the 'Incident' reporting form. It features a blue starburst icon with an exclamation mark and the text 'Report an incident or injury'. At the bottom, there is a 'View Details' button.



- ☐ Medical treatment injury
- ☒ High potential incident
- ☐ Event at a mine rescue station

* Relevant clauses of the regulations

✗ WHS(MPS) Reg 2022 s 124(5)(s)

WHS & WHS MPS silica monitoring obligations

Health monitoring:

What is it?

Monitoring worker health using lung function tests, e.g. spirometry, respiratory exam and chest x-ray

When do I need to do it?

- ⇒ Required for Workers who conduct processing of CSS that is high risk, as per WHS Reg s529CE.
- ⇒ Required if there is a significant risk of Worker exposure to RCS, as per WHS Reg 368 & Schedule 14.

Decision Point: if your site has workers conducting high risk silica processing activities, you must have health monitoring.

iCare website: www.icare.nsw.gov.au

[Play Lung Bus YouTube clip: <https://youtu.be/PCS8ZxScJsc>]



Work related dust
diseases



**Request an
appointment**

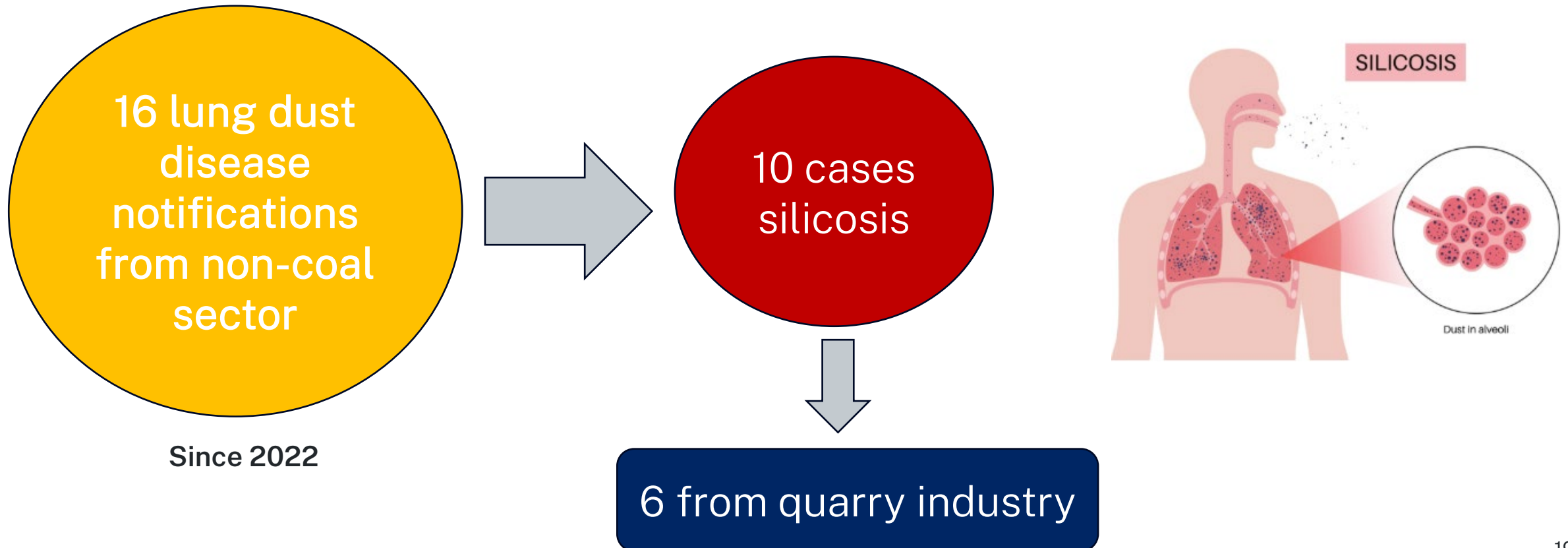
If you have worked in a dusty
environment, contact icare
about free lung health checks



WHS & WHS MPS silica monitoring obligations

Health monitoring:

How many cases of silicosis in metal mines and quarries?



WHS & WHS MPS silica monitoring obligations

Health monitoring:

Do I need a health control plan?

All Tier 1 and 2 quarry sites must have a health control plan:

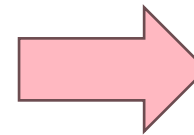
The health control plan must address dust and other airborne contaminant exposures, as per *Schedule 2* of the WHS (MPS) Regulation.

- ⇒ the plan must outline the control measures to manage the risks of the health hazards (silica), and
- ⇒ the arrangement for health monitoring of workers due to exposure to a hazardous chemicals (silica), as per WHS Regulation s368 and Schedule 14

Silica worker register (SWR) notification

The SWR requires relevant employers to register all workers undertaking high-risk silica processing activities.

Register your workers

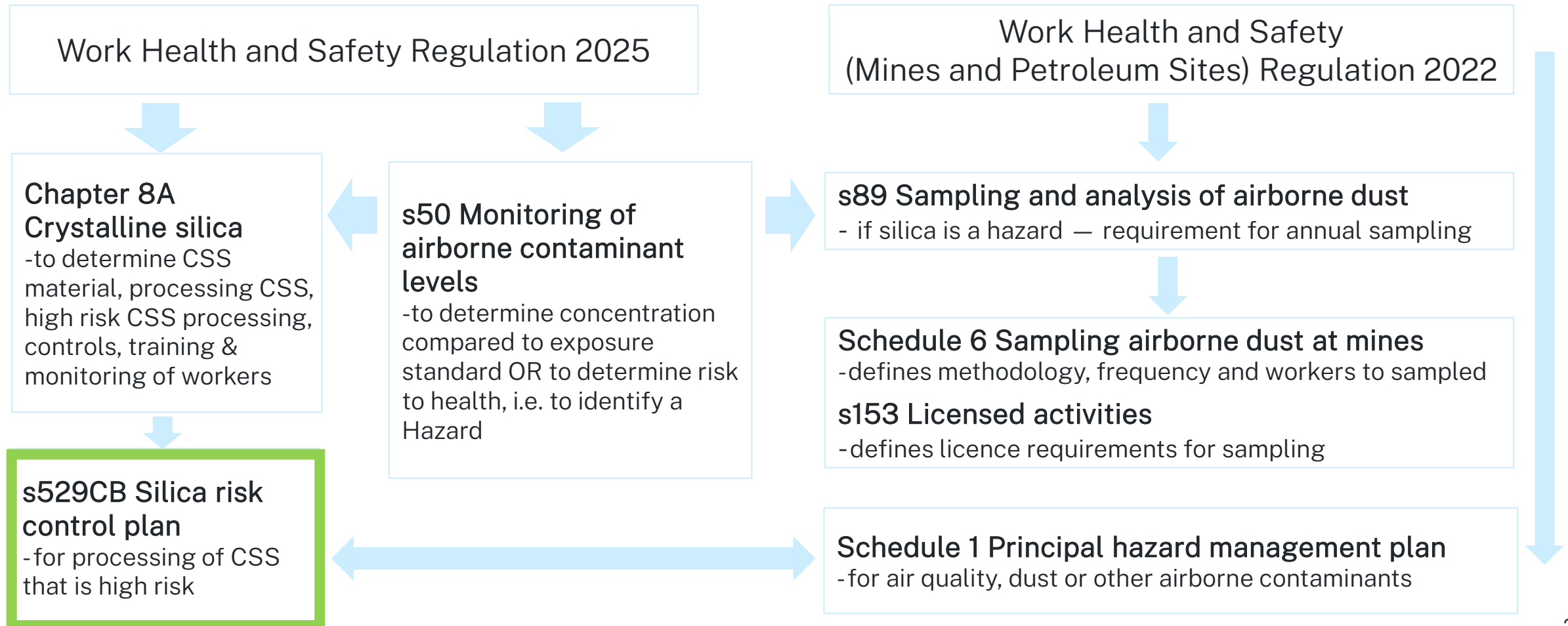


All workers doing high risk silica work need to be registered on the SafeWork Silica Worker Register

SafeWork NSW website link: www.safework.nsw.gov.au/notify-safework/silica-worker-register-notification

WHS & MPS Regulations –how does it fit together?

The WHS and WHS MPS Regulations work together, and both have to be complied with:



WHS control plan for silica - do I need one?

Principal hazard management plans (Tier 1 & 2 sites)

All Tier 1 and 2 quarry sites need to have a principal hazard management plan for airborne contaminants:

- ⇒ Airborne contaminants PHMP must be developed for the types of dust and other contaminants likely to be in the air, as per *s4* and *Schedule 1* of the WHS (MPS) Regulation.
- ⇒ The airborne contaminants PHMP must outline the control measures to manage the risks of the airborne contaminant hazards

Note: If your site has not identified dust and other airborne contaminants as a hazard.... BUT you carry out high-risk CSS processing then you need to have a **silica risk control plan**.

What do you need to add to your AQ PHMP to meet requirements for WHS silica regulations?

The silica regulations require you to develop a **silica risk control plan**, but your AQ PHMP will suffice if you have:

- ⇒ identified all tasks and processes at the site that meet the definition of a CSS process (as per *s529A*)
- ⇒ identified all high-risk CSS processing tasks and activities as per *s529CA*, and include the risk assessment used to determine the high-risk CSS processing activities
- ⇒ described the control measures used for each CSS processing activity and high-risk CSS processing activity
- ⇒ detailed how each control measure will be implemented, monitored and reviewed.

WHS control plan for silica – do I need one?

What about Tier 3 sites?

All Tier 3 quarry sites need to have a simplified silica risk control plan:

The systems, procedures, plans and other control measures already in place at your site must be modified to:

- ⇒ include the risk of crystalline silica
- ⇒ identify all high-risk CSS processing activities at the site
- ⇒ include the risk assessments used to determine what activities are high risk
- ⇒ document the control measures that will be used to control risk (including how they will be implemented, monitored and reviewed).

This document needs to be easy to understand and accessible for the people that will use it

[Silica risk control plan template](#)

silica risk control plan

Crystalline silica risk control plan template

Example crystalline silica risk control plan template.

Find out more →

[Copy link](#) [Email link](#)

Guidance
material

NSW Resources
Resources Regulator

NSW
GOVERNMENT

Fact sheet

Tier 3 quarries

January 2025

Preventing worker exposure to respirable crystalline silica

The Work Health and Safety Regulation 2017 was amended to further prevent, as far as reasonably practicable, worker exposure to respirable crystalline silica. These amendments are found in Chapter 8A of the WHS Regulation.

This fact sheet describes what tier 3 quarries will need to do to comply with the crystalline silica WHS Regulation.

What are the WHS crystalline silica Regulations?

The WHS crystalline silica Regulations require persons conducting a business or undertaking (PCBUs) to:

- determine if processing a crystalline silica substance (CSS) is undertaken by workers at the workplace
- implement control measures using the hierarchy of controls if processing a CSS is undertaken
- identify if any CSS processing tasks are classed as high risk
- have a silica risk control plan in place for workers carrying out high-risk processing of CSSs
- conduct training for workers in silica health risks, exposure and control
- conduct worker exposure and health monitoring.

What is a crystalline silica substance?

A CSS is any material that contains at least 1% crystalline silica, determined as a weight/weight concentration¹.

What does processing a CSS mean?

Processing a CSS² means any of the following:

- Using power tools or machinery to crush, cut, grind, trim, sand, abrasive polish or drill a CSS.
- Using a road header to excavate material that is a CSS.
- Quarrying a material that is a CSS.
- Mechanical screening of a CSS.

¹ As per clause 52BA(2) and (3) of the WHS Regulation
² As set out in clause 52BA(1) of the WHS Regulation

<https://www.resources.nsw.gov.au>

[Fact sheet link](#)

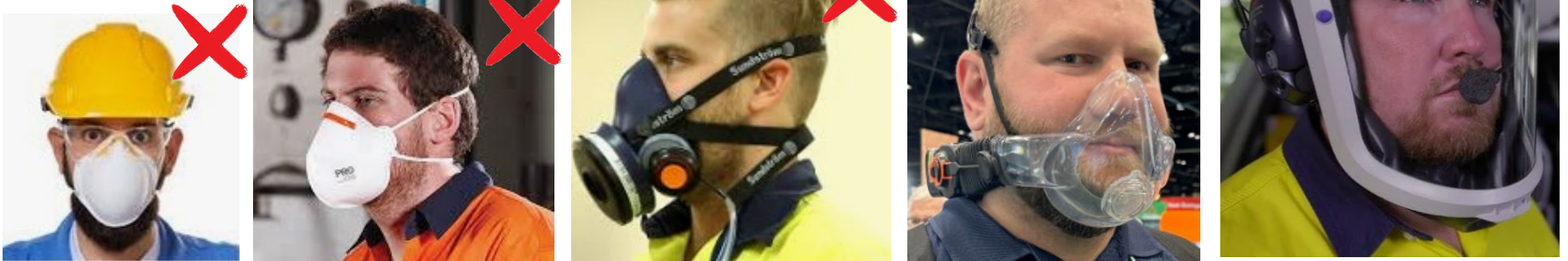
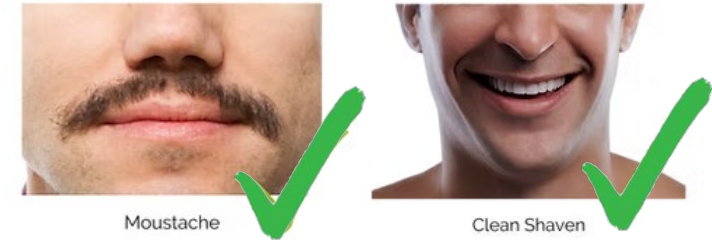
WHS silica exposure control

Respiratory protection – reminder

As per WHS requirements, all workers wearing tight-fitting RPE must:

- be clean shaven (where the sealing area of the mask contacts the skin)
- undertake and PASS a fit-test (recommended annually)

Visit the [Resp Fit website](#) for more information



Inspectors will be actively looking at RPE use during site inspections to check regulatory compliance.

Key take-home message

What you need to do?

- Determine if your site has crystalline silica substances and the risk to workers.
- Determine what monitoring you need to do for your workers (hygiene and health monitoring).
- Control silica exposure at your site (through management plans silica control plans).
- Train your workers in the silica risks and controls.



Silica dust compliance

Resources

2

Where to find help?

Resources list:

[WHS Regulation 2025](#)

[WHS \(Mines & Petroleum\) Regulation 2022](#)

[Working with crystalline silica substances – Guidance for PCBU's](#) - Safe Work Australia, July 2024

[Silica Resource Hub](#) – AIOH (Australian Institute of Occupational Hygienists)

[Licensed airborne dust sampling & analysis providers](#) – Resources Regulator Portal

[iCare NSW](#) – website

[Silica Worker Register \(SWR\) Notification](#) – SafeWork NSW

[Silica risk control plan template](#) – SafeWork NSW

[Fact sheet: Tier 3 Quarries preventing worker exposure to respirable crystalline silica](#) – Resources Regulator, January 2025

[Position paper: Regulatory approach to crystalline silica Regulation April 2025](#) – Resources Regulator, April 2025

[Resp Fit](#) – website, AIOH

[Fact sheet: Facial hair and respiratory protective equipment](#) – Resources Regulator, March 2024

Thank you