

# SILICA GUIDELINES

Guidance for working with  
Respirable Crystalline Silica

## Working with Silica

Crystalline silica is a common mineral that is contained in earth, sand, stone, concrete, and mortar. Respirable Crystalline Silica (RCS) are very small particles that can be created when cutting, sawing, grinding, drilling, and crushing stone, concrete, brick, block, pavers and mortar.

The silica dust hazard arises due to the inhalation and build-up of tiny silica particles in the lungs. Health Risks from Silica exposure include Chronic Obstructive Pulmonary Disease, Silicosis, Lung Cancer and Renal Disease. As a result, it has become a prominent workplace safety issue, requiring immediate action.

The amount of crystalline silica in products can vary.

An indication of levels is outlined below:

Engineered Stone	◆	>92%
Bricks & Pavers	◆	<60%
Concrete slabs	◆	20-85%
Gravel	◆	0-100%
Slate	◆	40-60%
Shale	◆	58-60%
Granite	◆	25-60%
Natural Sandstone	◆	70-90%
Composite (engineered or manufactured stone)	◆	<92%
Aggregates, mortar and concrete	◆	20-85%
Fibre-cement sheeting	◆	10-60%
Tiles (roof) concrete	◆	60-81%
Tiles (roof) terracotta	◆	10-70%
Tiles (floor and wall)	▲	5-45%
Autoclaved aerated concrete	▲	20-50%
Screeds and smoothing compounds	▲	30-50%
Waterproofing membranes	▲	0-30%
Powder based adhesives	▲	30-50%
Sanded grout	▲	30-50%
Marble	●	<10%
Limestone	●	<5%

This factsheet presents key legislative requirements and provides suggestions on how to mitigate exposure levels to silica dust.

## PPE Use and Maintenance Policy

- Workers must wear a minimum P2 dust mask that is AS/NZS 1716 compliant. Refer to the individual product SDS for specific controls.
- Complete a fit test to ensure the RPE is well fitted.
- Ensure you are trained on how to correctly wear and use any required PPE/RPE.
- Review all SDS before using materials/ products to ensure you are able to apply the adequate controls for the use of the product, including but not limited to the use of appropriate PPE/RPE.
- Stop work and remove yourself from the area if the RPE is not working properly.
- Look for broken or damaged components before using PPE and repair or replace it as needed.
- Replace PPE that has expired or reached its usable lifespan.
- Clean reusable PPE after use and store in a clean area such as a cupboard, drawer or resealable container.
- Report broken, damaged or contaminated PPE to your employer immediately.

## Housekeeping Policy

- Wherever possible, use products or materials that contain less silica.
- Wherever possible clean using wet methods.
- Where wet cutting is not possible, use on-tool dust shrouds and extractor collection methods and equipment when using drills, routers, saws, sanders or any other dust generating tool.
- Keep dust generating activities physically separated from other work areas.
- Minimise the generation of airborne dust through planning cut sequences.
- Minimise the frequency of potential exposure by task scheduling.
- Collect dust as it is generated using:
  - An industrial H-class vacuum cleaner with HEPA filter for engineered stone dust,
  - An industrial M-class vacuum cleaner with a HEPA filter for other silica containing dusts, or
  - Wet sweeping, and
- Bag and dispose of dust or slurry using a strong, durable bag or those provided with your dust extraction equipment.

## Personal decontamination

Before clothes and footwear worn during RCS work are removed from the work area, they should be decontaminated by thoroughly vacuuming with a HEPA filtered M-Class industrial vacuum cleaner or wiped down with damp rags or wet wipes to remove any residual RCS dust.

## Signage

When working with RCS materials/products where there is a risk of airborne dust, warning signage may be required to alert others to stay clear of the work area. Where deemed necessary, physical exclusion zones should also be used.

## Clean Shaven Policy

All persons working with products containing RCS may not have facial hair which could come into contact with the sealing surface of any required respirator. Reference NOISH Poster - OSHA Respiratory Protection Standard.

<https://www.cdc.gov/niosh/npptl/images/infographics/FacialHairWmaskLG.jpg>

## Health Monitoring

Where workers are exposed, suspected of being exposed or are concerned about exposure to crystalline silica, the person conducting the business or undertaking (PCBU) has a duty to arrange a health monitoring appointment for the worker(s) with the registered medical practitioner. Workers should undergo a baseline test on commencement and then medical examination annually.

## Air Monitoring

National guidance recommends that air monitoring should be undertaken at least every 12 months and when there is a change at the workplace, for example when a control measure changes. Air monitoring results must be readily available to workers and records of results kept for 30 years.

## Plant and Equipment Maintenance Policy

- Wherever possible use wet decontamination processes by using low pressure water, damp rags or wipes to wipe down contaminated plant and equipment.
- Only use rags once, although they may be refolded to expose a clean surface. Use flat and not wadded.
- If a bucket of water is used, the rags should not be re-wetted in the bucket as this will contaminate the water.
- Bag and dispose of dust or slurry using a strong, durable bag or those provided with your dust extraction equipment.
- Care should be taken to avoid any potential electrical hazards when using this procedure.

## ACT only

Any person intending to work on a construction site in the ACT must complete the Nationally Recognised Silica Awareness Training -

# FURTHER TRADE SPECIFIC CONTROLS

## Brick & Block Layers, Hebel Installers, & Landscapers (Masonry & Concrete)

- Bricks, blocks, pavers, aerated concrete panels, must be wet cut.
- On-tool dust extraction such as dust shrouds or vacuum extractors must be used where wet cutting is not possible.
- Use a minimum M-Class vacuum cleaner (HEPA filter) for cleaning up dust.
- Ensure good general ventilation by natural or mechanical means.
- Limit the number of persons near dusty work.
- Rotate workers undertaking dusty tasks.
- Workers must wear a minimum P2 dust mask that is AS/NZS 1716 compliant. Refer to the individual product SDS for specific controls.

## Engineered Stone

- All engineered stone must be returned to the factory to be cut or modified in a controlled environment. Onsite cutting of engineered stone is banned.

## Floor & Wall, and Roof Tilers

- Wherever possible, cut tiles using a score and snap cutter or wet saw or wet grinder.
- Dry cutting is only allowed when using equipment fitted with on-tool dust collection methods.
- Use a minimum M-Class vacuum cleaner (HEPA filter) for cleaning up dust.
- Ensure good general ventilation by natural or mechanical means.
- Limit the number of persons near dusty work.
- Rotate workers undertaking dusty tasks.
- Workers must wear a minimum P2 dust mask that is AS/NZS 1716 compliant. Refer to the individual product SDS for specific controls.

## Mobile Plant

- Large machinery (excavators and bulldozers) should be fitted with cabs that have an air filtering system.

## Plasterboard Installers, Waterproofers and Painters

- When dry sanding with hand tools use on-tool dust extraction.
- Use a minimum M-Class vacuum cleaner (HEPA filter) for cleaning up dust.
- Ensure good general ventilation by natural or mechanical means.
- Limit the number of persons near dusty work.
- Rotate workers undertaking dusty tasks.
- Workers must wear a minimum P2 dust mask that is AS/NZS 1716 compliant. Refer to the individual product SDS for specific controls

## Working with concrete

- Concrete cutting must be completed using the wet cut method wherever possible.
- Where wet cutting is not possible, such as grinding and drilling tasks, on-tool dust extraction such as dust shrouds or vacuum extractors must be used.
- Ensure good general ventilation by natural or mechanical means.
- Limit the number of persons near dusty work.
- Rotate workers undertaking dusty tasks.
- Workers must wear a minimum P2 dust mask that is AS/NZS 1716 compliant. Refer to the individual product SDS for specific controls.

## SWMS

Contractor SWMSs should include information regarding contaminated atmospheres, hazards and control measures as explained above including, but not limited to:

- Engineering controls
- PPE
- supervision
- control measure failures
- consideration of other contractors in the immediate area
- housekeeping
- monitoring

Contact your State Safety Regulator for more information:

Jurisdiction	Regulator	Telephone	Website
 New South Wales	SafeWork NSW	13 10 50	<a href="https://safework.nsw.gov.au/">safework.nsw.gov.au/</a> <a href="https://www.safework.nsw.gov.au/search?query=SILICA">https://www.safework.nsw.gov.au/search?query=SILICA</a>
 Victoria	WorkSafe Victoria	1800 136 089	<a href="https://worksafe.vic.gov.au/">worksafe.vic.gov.au</a> <a href="https://www.worksafe.vic.gov.au/crystalline-silica">https://www.worksafe.vic.gov.au/crystalline-silica</a>
 Queensland	WorkSafe Queensland	1300 369 915	<a href="https://worksafe.qld.gov.au/">worksafe.qld.gov.au</a> <a href="https://www.worksafe.qld.gov.au/search?query=SILICA">https://www.worksafe.qld.gov.au/search?query=SILICA</a>
 South Australia	SafeWork SA	1800 777 209	<a href="https://safework.sa.gov.au/">safework.sa.gov.au</a> <a href="https://www.safework.sa.gov.au/workplaces/chemicals-substances-and-explosives/silica">https://www.safework.sa.gov.au/workplaces/chemicals-substances-and-explosives/silica</a> <a href="https://www.safework.sa.gov.au/news-and-alerts/news/news/news-alerts/safework-sa-ensuring-workplaces-with-silica-dust-breathe-easy">https://www.safework.sa.gov.au/news-and-alerts/news/news/news-alerts/safework-sa-ensuring-workplaces-with-silica-dust-breathe-easy</a>
 Australian Capital Territory	WorkSafe ACT	02 6207 3000	<a href="https://worksafe.act.gov.au/health-safety">worksafe.act.gov.au/ health-safety</a> <a href="https://www.worksafe.act.gov.au/health-and-safety-portal/safety-topics/dangerous-goods-and-hazardous-substances/silica-dust">https://www.worksafe.act.gov.au/health-and-safety-portal/safety-topics/dangerous-goods-and-hazardous-substances/silica-dust</a>
 Tasmania	WorkSafe Tasmania	1300 366 322	<a href="https://worksafe.tas.gov.au/">worksafe.tas.gov.au</a> <a href="https://www.worksafe.tas.gov.au/silicasafe">https://www.worksafe.tas.gov.au/silicasafe</a>

Further resources are also available at Safe Work Australia

<https://www.safeworkaustralia.gov.au/safety-topic/hazards/crystalline-silica-and-silicosis>



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