

## BACKGROUND

The Australian Roofing Tile Association (ARTA) is the peak body representing the concerns and interests of more than 90% of the roofing tile industry in Australia. Safety is a major issue and concern for our members.


ARTA is collaboratively working with roofing tile manufacturers and Work Health and Safety officials to ensure that the roofing tile industry leads the way when it comes to safeguarding against respirable crystalline 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 terracotta and concrete tiles.

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.


This factsheet presents key legislative requirements and provide suggestions to mitigate exposure levels to silica dust.

## SUGGESTED WORKPLACE ADJUSTMENTS

 Familiarise yourself with the WHS 2011 regulations 38 & 52 for more detailed reviewing of control measures. Refer to manufacturers' Safety Data Sheets (SDS) for recommended safe working practices.

 Use tools and equipment capable of capturing and extracting silica dust:

- Use adequate ventilation to provide silica dust with an outlet;
- Use water suppression cutting systems to limit airborne silica dust; and
- Use high velocity low volume hoods for dust collection.

 Scheduling and site control:

- Pre-cutting or drilling works in factories where possible;
- No uncontrolled or unplanned dry cutting;
- Routing electrical wiring over the wall where possible;
- Wash down your site constantly with water and/or use Class M or H vacuum cleaners;
- Regular wet sweeping to prevent dust from spreading; and
- Remind workers to leave clothes on site to prevent silica dust from spreading to the public.

## PCBU Requirements

Workplace Health and Safety Laws stipulate that the employer or Persons Conducting a Business or Undertaking (PCBU) should control the hazards to minimise the risks from silica exposure<sup>[1]</sup>. The silica related clauses can be found in Chapters 3 and 7 of the Work and Safety (WHS) 2011 Regulations<sup>[5]</sup>. The following regulations must be strictly followed to minimise the silica exposure level to workers:

### Identifying all silica hazards

The PCBU must use a Safety Data Sheet (SDS) to identify and label silica hazards.

### Labelling, recording and registering hazardous chemicals and SDS

Proper housekeeping, warning signage, restricting the time of exposure and rotation of staff away from dusty areas.

### Managing the risk

Use of Respiratory Protective Equipment (RPE), in particular face masks, complying with AS/NZS 1715:2009 and AS/NZS 1716:2012 will help manage the risks associated with silica dust:

- Be aware that different types of masks offer different levels of protection;
- Ensure masks are stored in a clean environment;
- Half-face RPE wearers need to be clean shaven;
- The quality of masks are consistent and they're replaced when necessary;
- Workers must be trained in how to use and maintain RPE.

### Health monitoring & records for exposed workers

For Workers exposed to silica over the Regulation Limits (Table 1), the PCBU must inform and provide the worker with a registered medical practitioner for health monitoring.

### Induction, information, training and supervision about silica

Workers should be trained to understand:

- How to identify different silica hazards
- Control measures to prevent silica exposure and spreading
- What to do in the event of silica exposure.

## OTHER AUTHORITY REQUIREMENTS

SafeWork Australia Workplace Exposure Standards<sup>[6]</sup> outlines the exposure limits for silica related chemical components (shown in Table 1), to protect workers from silica-related works. The 8-hour time weighted average airborne concentration of silica shall not exceed the concentration limit (shown in table 1).

### Ⓛ 8-Hour Time-Weighted Average (TWA)

Eight hour time-weighted average exposure standards are the average airborne concentration of a particular substance that is permitted over an eight-hour working day, and a 5 day working week.

## TESTING AND MONITORING PROGRAMMES SERVICE

**Haztek, a health, hygiene and safety consultancy** have the expertise to assist organisations in developing silica hazard identification, assessment and monitoring programmes to meet industry requirements. Their contact details are:

Tel: 1300 55 3001

Website: [www.haztek.com.au](http://www.haztek.com.au)

\* We do not recommend or endorse any companies for their engineering, testing services or products. The provision of these contact details does not mean that we endorse or recommend these companies.

Chemical Name	Concentration Limit Over 8 hours (mg/m <sup>3</sup> )
<b>Silica - Amorphous</b>	
Diatomaceous Earth (Uncalcined)	10
Fumed Silica (Thermically Generated)	8
Respirable Dust	2
Fumed Silica (Respirable Dust)	2
Precipitated Silica	10
Silica Gel	10
<b>Silica - Crystalline</b>	
Cristobalite	0.1
Quartz	0.1
Tridymite	0.1

Table 1: Silica Concentration Limits indicated by Safe Work Australia <sup>[6]</sup>.



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## REFERENCES TO LEGISLATION, CODES OF CONDUCT AND INDUSTRY GUIDES

- [1] [Workplace Health and Safety Queensland \(2013\), Silica – Technical guide to managing exposure in the workplace, Queensland Government](#)
- [2] [Workplace Health and Safety Queensland \(2013\), Silica – Identifying and managing crystalline silica dust and exposure, Queensland Government](#)
- [3] [Department of Commerce \(2010\), Code of Practice: Concrete and Masonry cutting and drilling 2010, Perth, Government of Western Australia.](#)
- [4] [SafeWork NSW \(n.d\), Crystalline Silica, Gosford, NSW Government](#)
- [5] [Work Health and Safety Regulations 2011 \(2017\), Australian Government](#)
- [6] [Safe Work Australia \(2018\), Work Place Standards for Airborne Contaminants, Canberra](#)
- [7] [United States Department of Labor, Occupational Safety and Health Administration, OSHA Factsheet - OSHA's Respirable Crystalline Silica Standard for Construction, United States.](#)

Are there silica dust warning signs clearly displayed around your workspace?

Have you been fit tested and trained in the use and maintenance of Respiratory Protective Equipment?

Have you set up a rotation to limit exposure times?

Do you have adequate ventilation?

Are you working in an enclosed space? Is your local exhaust ventilation and ventilation hood on?

Are you using water suppression techniques on your tools?

Are you regularly wet sweeping your workspace?

Packing up? Have you washed down your workspace or are you using a Class M or H vacuum cleaner?

Heading home? Have you changed out of your silica contaminated work clothes and showered if possible?

Have you submitted your work clothes for laundering on site or dampened and contained your clothes for washing at home in a plastic bag?

Get home safely!

**LEAVE YOUR WORK CLOTHES ON SITE.  
DON'T PUT THE PUBLIC AT RISK.**