

SILICA DUST

What you need to know

Revised August 2024

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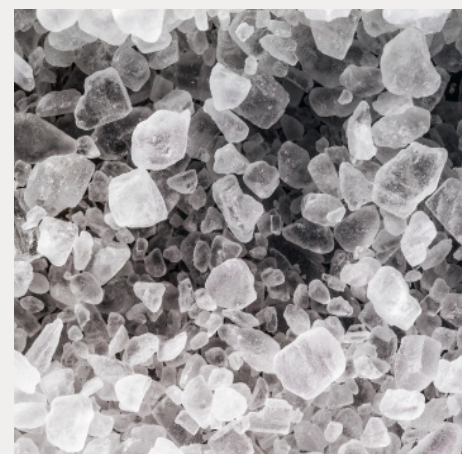
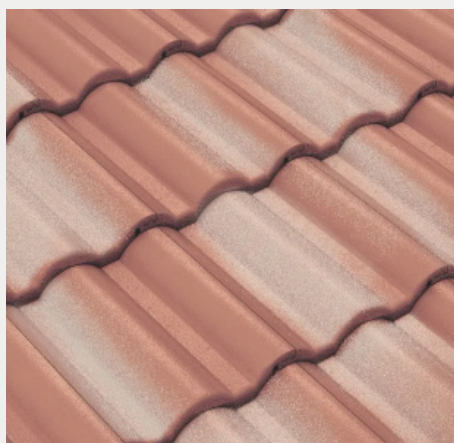
WHAT IS IT?

Silica is an abundant mineral that can be found almost everywhere, such as on our wonderful sandy beaches, as well in our building products. Roof tiles can contain anywhere between 0.1% to 60% silica content, however, it is important to note that although these building materials can contain high volumes of silica, in their resting state, roof tiles **do not pose any risk to workers or consumers**.

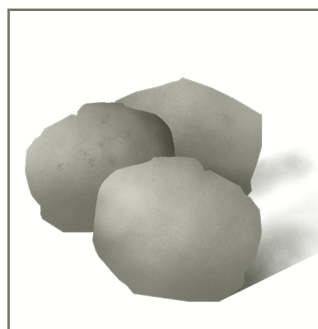
The risk only occurs when the material is physically modified through processes including cutting, grinding, and drilling. This will cause the crystalline silica to become airborne, resulting in Respirable Crystalline Silica (RCS) otherwise known as silica dust. Silica can be found in beach sand at around 90 microns, however, silica dust particles are much smaller at sizes between 0.2 - 7 microns which is considered 'respirable'.

Due to the modular nature of roof tiles, there is a reduced need for cutting onsite. In contrast, other silica-containing materials require frequent cutting and modification on-site, particularly in indoor, poorly ventilated spaces.

As a result, **roof tiles pose minimal risk to worker exposure to silica dust when processed and used in compliance with our manufacturer's safety guidelines.**

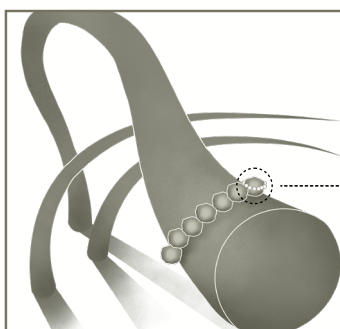


HOW SMALL IS SILICA DUST



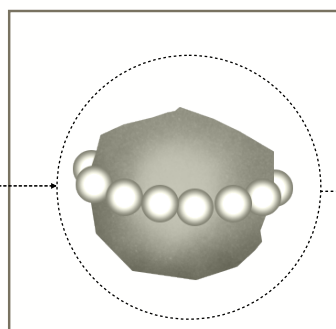
GRAIN OF SAND

90µm
(microns) in diameter



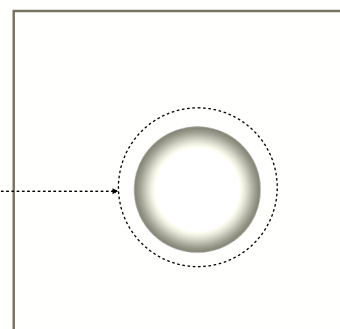
HUMAN HAIR

50-70µm
(microns) in diameter



DUST, POLLEN, MOLD

<10µm
(microns) in diameter



SILICIA DUST

<0.2 - 7µm
(microns) in diameter

WHY IS SILICA DUST SO DANGEROUS?

Silica dust refers to very fine particles that can be 100 times smaller than sand which makes inhaling it unnoticeable. When large amounts of silica dust are inhaled deep into the lungs, it could lead to a range of respiratory diseases including silicosis and lung cancer. High exposure to silica dust may also increase the risk of adverse and chronic health conditions. Historically, there has not been adequate controls in place to protect workers from silica dust exposure, which has led to cases of silicosis predominantly from the engineered stone manufacturing industry.

Current WHS codes and practices have reduced this risk significantly, and the concrete and terracotta tile industry is committed to ensuring these relevant procedures are enacted to protect workers. These include:

- The prohibition of any uncontrolled dry cutting
- Using ventilated machinery and tools
- Using water suppression (wet cutting) systems
- Having adequate respiratory protective equipment (RPE)

For further information Australian Roofing Tile Association recommends reviewing Safe Work Australia guidance¹.



WHAT IS YOUR SITUATION?

What if I want to build?

If you're currently building or doing maintenance on your tiled home, there are some important steps you need to consider:

1

ELIMINATE RISKS
Tiles are modular reducing the occurrence of onsite cutting.

2

ENGINEERING CONTROLS
Use wet cutting power tools or those fitted with dust extraction.

3

ADMINISTRATION CONTROLS
Cut outside and in isolation to reduce your exposure to silica dust.

4

USE RPE
Make sure your dust mask fits snugly against your face.

What if I live with a tiled roof?

If you're already living with a tiled roof, you don't have to do anything! Roof tiles pose zero risk to occupants in their resting state, so you are completely safe.

NEW REGULATIONS FOR PROCESSING MATERIALS CONTAINING CRYSTALLINE SILICA

WHEN DO THE REGULATIONS COME INTO EFFECT?

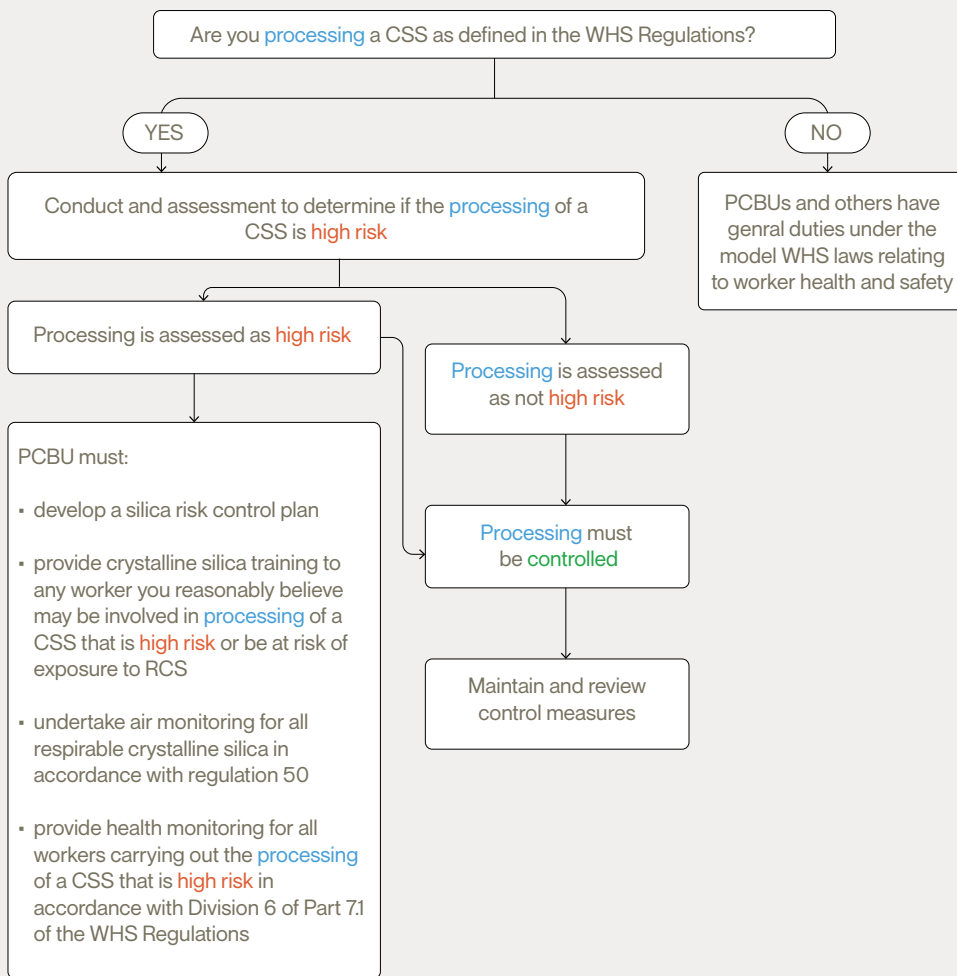
From the 1st July 2024, the ban on the manufacture, supply, processing and installation of engineered stone benchtops, slabs and panels has come into effect. This ban does not include concrete and terracotta roof tiles.

However, from the 1st September 2024, there are additional regulations in relation to the **processing** of crystalline silica substances (CSS), which are materials that contain at least 1% crystalline silica. This includes concrete and terracotta roof tiles.

PCBUs must determine if a CSS process is **high risk** and enact appropriate measures discussed below. Regardless of whether the **processing** of a CSS is **high risk** or not, all processing must be **controlled**.

WHAT IS IN THE NEW REGULATIONS?

A PCBU must follow the flow chat below to comply with the new regulations when processing a CSS:



The full guidance material on the new regulations from Safe Work Australia can be found [here](#).

FURTHER INFORMATION

For further information, please visit your relevant regulatory authority.

[Safe Work Australia](#) [WorkSafe Qld](#) [WorkSafe ACT](#) [SafeWork SA](#)
[SafeWork NSW](#) [WorkSafe Victoria](#) [WorkSafe Tasmania](#) [WorkSafe WA](#)

[†]Previous air monitoring results can be used if appropriate. Otherwise, data may be obtained from the manufacturer of a control/tool used, or from a certified occupational hygienist. Air monitoring data that shows the airborne concentration of RCS exceeds half the WES may not automatically result in a determination that the processing of a CSS is high risk. Other factors must be considered, in particular the frequency and duration of the processing of a CSS and may influence the assessment.

WHAT DOES PROCESSING MEAN FOR CONCRETE AND TERRACOTTA ROOF TILES?

- The use of power tools or mechanical plant to crush, cut, grind, trim, sand or drill a masonry product; or
- The quarrying or excavation of CSS material going into blocks; or
- The mechanical screening of material that is a CSS; or
- Any process that exposes, or is reasonably likely to expose, a person to RCS during the manufacture or handling of a CSS.

HOW TO DETERMINE IF PROCESSING OF A CSS IS HIGH RISK?

The following items should be considered in an assessment to determine if a CSS process is high risk:

- the processing to be undertaken,
- the form/s and proportion of crystalline silica present in the CSS,
- the hazards associated with the processing, including frequency and duration that a person will be exposed to RCS,
- whether the airborne concentration of RCS at the workplace is reasonably likely to exceed half the workplace exposure standard (WES)[†],
- any relevant air and/or health monitoring previously undertaken at the workplace, and
- any previous incidents or illnesses associated with exposure to RCS at the workplace.

ENSURING PROCESSING OF A CSS IS CONTROLLED

A CSS is controlled if:

- Control measures to eliminate or minimising risks from the processing are implemented so far as is reasonably practicable; and;
- At least 1 of the follow is implemented during the processing:
 - The isolation of a person from dust;
 - A fully enclosed operator cabin fitted with a high efficiency air filtration system;
 - An effective wet dust suppression method;
 - An effective on-tool extraction system
 - An effective local exhaust ventilation system; and
- A person still at risk of being exposed to RCS after 1 of (b) has been implemented:
 - Is provided with RPE; and
 - Wears the RPE during the processing.

If it is not reasonably practicable to implement at least one of the controls in (b), the processing can be controlled if a person at risk of being exposed to RCS is provided with appropriate RPE and wears the RPE while the processing is carried out.