# Toolbox Talk

## Crystalline Silica Safety


### What is Crystalline Silica?
Crystalline silica is a naturally occurring form of the mineral silicon dioxide that exists in the form of crystals.

### Is Crystalline Silica Dangerous?
Yes, crystalline silica can be extremely dangerous. Crystalline silica can form a dust fine enough to penetrate deep into the lungs during the process of cutting, sanding, drilling or grinding.

Crystalline Silica is commonly found in engineered stone, posing potential health risks when airborne particles are generated during cutting or grinding processes.

### Where is Crystalline Silica Found?
It can be found in materials like sand, concrete, rock, stone, and even some artificial stone products.

Crystalline Silica can also be found in other building materials and manufacturing products such as, bricks, mortar, tiles and some filler / putty products.

Some industries where exposure to crystalline silica can exist:

- **Construction industry:** working with materials such as concrete, mortar, sand, stone, or rock
- **Mining Industry:** Crystalline silica is a common component of many minerals and ores
- **Manufacturing**: Glass manufacturing, ceramics, pottery, brick – making and foundries
- **Quarrying and Stone Cutting industry:** Workers involved in quarrying or cutting stones, rocks, or aggregates
- **Sandblasting Industry:** Sandblasting using air to propel abrasive material such as sand

It is crucial that we understand the potential hazards associated with crystalline silica and take necessary precautions to protect ourselves and our fellow workers.

### Health Hazards
Inhalation of crystalline silica dust can lead to various health issues, including:

1. Silicosis: A lung disease caused by the long – term exposure to crystalline silica dust. It results in the formation of scar tissue in the lungs, leading to breathing difficulties and irreversible damage.
2. Lung Cancer: Prolonged exposure to high levels of crystalline silica dust increased the risk of developing lung cancer
3. Chronic Obstructive Pulmonary Disease (COPD): Exposure to crystalline silica dust can aggravate pre-existing respiratory conditions, such as COPD, making it harder to breathe

## Preventive measures

To protect ourselves from the hazards associated with crystalline silica, we must implement the following preventative measures:

| | |
|---|---|
| Elimination | • Eliminate silica dust at the source by eliminating the processes that generates dust<br>• Eliminating the use of silica containing products |
| Substitution | • Use products that do not contain silica or have less silica in them<br>• Use a silica containing product that does not need to be cut, ground or polished<br>• Use a liquid or paste form of a silica product |
| Engineering Controls | • Isolating high dust generation work processes within an enclosed room with restricted access<br>• Automation when cutting, grinding or drilling<br>• Using wet cutting methods<br>• Local exhaust ventilation<br>• Cleaning up dust with a M or H-class industrial Vacuum cleaner |
| Administrative Controls | • Planning cutting tasks to make sure the minimum number of cuts are made<br>• Written rules and policies for working with silica or cleaning silica waste<br>• Having a written clean-up procedure and log<br>• Safe use and storage of PPE<br>• Ensure workers a adequately trained in the use and hazards associated with Crystalline Silica |
| Personal Protective Equipment | • Provision of adequate respiratory equipment<br>• Fit testing respiratory protective equipment<br>• Eye Protection<br>• Aprons, footwear and gloves |