



UNDERSTANDING SILICA IN TILES

Definitions + General Safety Tips When Working With Tiles

What is Silica?

Silica or Crystalline silica is silicon dioxide (SiO_2), a naturally occurring and widely abundant mineral that forms the major component of most rocks and soils. The most common type of crystalline silica is quartz. Silica is found in many common construction materials, such as tiles, bricks, concrete and mortar in various amounts. Crystalline silica is a key component in the manufacturing process of porcelain tiles. When incorporated into tiles it increases the ability to withstand high temperatures and resist chipping, cracking, and scratching.

How much crystalline silica is present depends on the material.

Some common materials/products and their typical crystalline silica content include: (% by weight)

- ceramic tiles - 5% to 45%
- porcelain - 14% to 18%
- engineered stone - up to 95%
- granite - 25% to 60%
- sandstone - 70% to 90%
- marble - less than 5%
- brick - 5% to 15%
- concrete - less than 30%
- conventional powder adhesives - 30% to 50%
- non sanded powder adhesives - 0%



Tiles are a mixture of natural compounds like clays, feldspars, kaolin and colorants mixed with water and fired at very high temperatures. The finished tiles do not present immediate hazard to health since they are stable, odorless, non-inflammable and there is no release of hazardous substance.

What is Silicosis?

Silicosis is a type of pulmonary fibrosis, a long-term lung disease that is caused by breathing in fine crystalline silica dust particles. The dust is released during operations such as grinding, dry cutting, polishing, demolition or manufacturing materials containing silica. Exposure to crystalline silica dust over a long period of time at low to moderate levels, or short periods at high levels, can lead to serious health conditions such as silicosis.



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Preventing the risk of exposure

Wear personal protective equipment including appropriate respiratory protective equipment, which complies with the standard AS/NZS 1716 – Respiratory protective devices - a minimum of a P2 efficiency half face respirator is required and eye protection that meets AS/NZS 1337.1 standards. Plus avoid wearing work wear that gathers dust.

Avoid dry cutting and dry grinding where possible. Water suppression uses water at the point of dust generation to dampen down or suppress dust before it is released into the air.

To reduce exposure to fine crystalline silica dust use on-tool dust extraction, which removes the dust from the source as it is being produced. An extraction device is fitted directly onto the tool and attached to a high efficiency particulate air (HEPA) filtered Dust Class M or H vacuum cleaner.

Thoroughly wash face and hands with water after handling.

By following general safety precautions, everyone can work safely with tiles and avoid the health risks of inhaling harmful silica dust.

Metro Tiles acknowledges the potential risks associated with crystalline silica dust and is committed to the safety of its customers and maintaining compliance with all Australian safety standards.

For more information on Silica or Crystalline silica dust we recommend visiting the SafeWork Australia website.

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