

1. Description:

Exposure to crystalline silica often occurs as part of common workplace operations involving cutting, sawing, drilling, grinding/sanding and crushing of natural and engineered stone products such as granite and slate and also in the quarrying of these materials. Over-exposure can lead to serious, sometimes fatal illnesses including silicosis, lung cancer, tuberculosis (in those with silicosis) and chronic obstructive pulmonary disease (COPD). The best method to prevent a crystalline silica exposure related disease is to minimize exposure to crystalline silica.

2. What is Crystalline Silica and Silicosis?

Crystalline silica is a naturally occurring mineral found abundantly in the earth's crust. It occurs in several forms with quartz being the most common form. It is a component of sand, stone and rock and thus also a component of manmade materials such as concrete, brick, block, and mortar. In the stone industry, exposure to crystalline silica often occurs as part of common workplace operations involving cutting, sawing, drilling, grinding/sanding and crushing of natural and engineered stone products such as granite and slate and also in the quarrying of these materials. Silicosis is a serious lung disease caused by over-exposure to minute, typically invisible crystalline silica particles. Over-exposure may be in the form of short duration – high concentration exposures or long-term –lower concentration exposures. These minute, typically invisible particles cause permanent scarring in the lung tissues which progresses over time.

There are three (3) types of silicosis:

1. Chronic: usually develops after ten (10) or more years of low level exposures
2. Accelerated: typically develops five (5) to ten (10) years after high level exposures
3. Acute: typically develops within a few months to five (5) years after high level exposures

The symptoms of silicosis may include intense cough, shortness of breath, or weakness. Other possible symptoms are chest pain, fever, night sweats, weight loss, and respiratory fever.

3. Crystalline Silica Exposure Control Measures:

- Use of wet machining, grinding/sanding, cutting and drilling processes which use water to suppress and collect particles.
- Use dust collection systems when wet operations are not available.
- When work practices or available systems do not achieve exposures below the permissible exposure limit, wear the appropriate personal protection equipment (PPE) provided and recommended by the employer. This may include but is not limited to a uniform or protective clothing. Safety eye ware and a respiratory protection.