

## SILICA EXPOSURE

### 1. Task

Prevention of worker exposure to Crystalline Silica.

### 2. Hazard

Health effects include serious and incurable diseases of the lungs such as; silicosis, lung cancer, chronic obstructive pulmonary disease, emphysema, and pulmonary tuberculosis. Silica is the name given to a group of minerals made from silicon and oxygen. Silica mineral deposits contain both crystalline and amorphous silica, with quartz being the most common of the crystalline type. Inhalation of respirable crystalline silica dust particles is the main cause of disease related to silica.

### 3. Controls

Hazard Assessment, silica substitutes (especially in sandblasting operations), local ventilation, wet processes, enclosures around work processes, hepa filters on vacuums, PPE applicable to the task, dust control additives, protective clothing, alternate equipment (dustless grinders), hygiene practices, alternate shift work, separation of work areas and adequate warning signs.

Review local Regulatory Requirements regarding the use of crystalline silica prior to using it in sandblasting operations. Refer to the Silica Exposure Control Plans and supporting documents (ie. Safe Work Practices and Procedures, Hazard Assessment, etc.) found in the Worksafe Library which are required to be completed for each project.

- ❖ Silica dust is produced during construction related activities such as bricklaying, stone setting, demolition, and repair of concrete materials. It is also produced during rock drilling, dry sweeping, abrasive blasting, quarrying and mining.
- ❖ Workers must not be exposed to Occupational Exposure Limits of more than 0.05 milligrams (Ontario) 0.025 milligrams (Alberta/BC) per cubic metre of airborne, respirable, Crystalline Silica particulate, (quartz).
- ❖ Abrasive blasting reduces silica sand to respirable sized particulates.
- ❖ Wherever possible use silica substitutes.
- ❖ Establish Code of Practice for silica operations.
- ❖ Ensure workers undergo required health assessments, (paid for by the employer).
- ❖ Establish respiratory protection program for proper selection and use of respirators.
- ❖ Ensure protective clothing and respirators are supplied and used.
- ❖ Minimize the release of crystalline silica, keep worker exposure as low as possible – never exceed OEL.
- ❖ Clean up accumulations of particulate crystalline silica in the workplace.
- ❖ Decontamination of workers, equipment, and materials must not release airborne crystalline silica particulate. Prevent contamination of workers street clothes. Workers must decontaminate themselves prior to leaving restricted work areas.
- ❖ Post and maintain crystalline silica hazard warning signs at access to established restricted work areas.