Working with Silica Policy

It is important that Steadfast Roofing employees are aware of the hazards and risk associated with working with Silica. Please make sure that you have read the information provided below by Government of Western Australia, Dept of Mines, Industry Regulation and Safety. Further information can be found on their website following link below.

https://www.commerce.wa.gov.au/worksafe/silica-0

If you have any concerns or questions regarding working with Silica, please contact your site supervisor or Director of Steadfast Roofing

What is Silica and where is it found?

Silica is a common naturally occurring mineral, also known as silicon dioxide. One common type of crystalline silica is quartz. Silica can be found or manufactured in different forms, broadly divided into crystalline and non-crystalline (amorphous). This information focuses on respirable crystalline silica, which is the more hazardous form.

Silica is a major constituent of many types of sand. It is also a component of concrete and some bricks and rocks (eg granite, slate, sandstone). As such, this hazard can be found in industries such as construction, masonry, mining, and foundries.

What is the Hazard?

Breathing in fine (respirable) crystalline silica can cause:

- Silicosis (an incurable lung disease, with inflammation and scarring of the lungs, causing shortness of breath, coughing, fatigue and other symptoms). Silicosis can develop either quickly or slowly depending on exposure levels. It is a potentially fatal condition.
- Lung cancer (associated with silicosis)
- Kidney disease
- Increased risk of tuberculosis
- Possible increased risk of autoimmune diseases

Amorphous silica does not have these health hazards.

What tasks can lead to high crystalline silica exposure?

- Jack-hammering concrete
- Dry sanding of concrete
- Dry brick, concrete or stone cutting.
- Abrasive blasting where the blasting agent or the surface being blasted (eg brick, concrete) contains significant silica content;
- Earthworks
- Rock crushing
- Mineral sample milling
- Roadworks
- Other tasks where dust is generated from a material with high crystalline silica content.

Crystalline silica particles that have just been fractured or abraded are more hazardous (eg crushing or cutting processes).

Risk Management

Occupational safety and health legislation requires employers, in consultation with workers, to identify hazards, assess risks and implement practical controls to protect workers' health and safety.

Silica can be identified by considering the types of materials used in the task. More information is available in material safety data sheets where these are available (eg for abrasive blasting agents) and from material suppliers.

The risk of silica exposure from the task is assessed by examining the work processes involving crystalline silica. The assessment must consider the dust exposure that could occur. Having dust levels monitored is the most accurate way to assess the risk, however in some cases (eg where there are visible clouds of dust from high silica materials, such as during dry concrete cutting) the risk may be clear without monitoring. It should be noted that very fine particles may be difficult to see in air, and monitoring is required to assess the risk from such particles. Workers must not be exposed to respirable crystalline silica levels above the national exposure standard of 0.05 mg/m^3 over 8-hour TWA.

The occupational safety and health regulations require that exposure to hazardous substances be prevented where practical. If exposure can't be prevented, the risk must be reduced firstly by controls other than personal protective equipment (PPE). Regulation 5.20 of the Occupational Safety and Health Regulations 1996 (the OSH regulations) requires that PPE is only to be used to manage any remaining risk.

Examples of controls for crystalline silica include:

- Choosing materials (eg abrasive blasting agents) that are silica free or have the lowest silica content
- Designing buildings with recesses for services to reduce the amount of chasing required.
- Providing vehicles with enclosed cabs fitted with high efficiency air filters, for dusty earthworks or mining
- Using wet work methods to reduce dust (eg wet cutting or polishing, water sprays during earthworks)
- Using water spray or rubber curtains around conveyor transfer points
- Using local extraction ventilation, either fixed or on-tool (eg for mixing, crushing, milling, drilling or chasing)
- Shadow vacuuming (eg during drilling)
- Vacuum clean-up rather than sweeping.
- Not blowing dust with compressed air
- In addition to other controls, PPE such as an appropriate respirator (selected in accordance with Australian/New Zealand Standard A*S/NZS 1715: Selection use and maintenance of respiratory protective equipment*) may be required, depending on the task and the effectiveness of the other controls.

If there is regular exposure to crystalline silica and there may be a health risk (for example, where exposure is frequently at or above 50% of the exposure standard), health surveillance must be provided to workers under regulation 5.23 of the OSH regulations.

Michael Lonergan – Director

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