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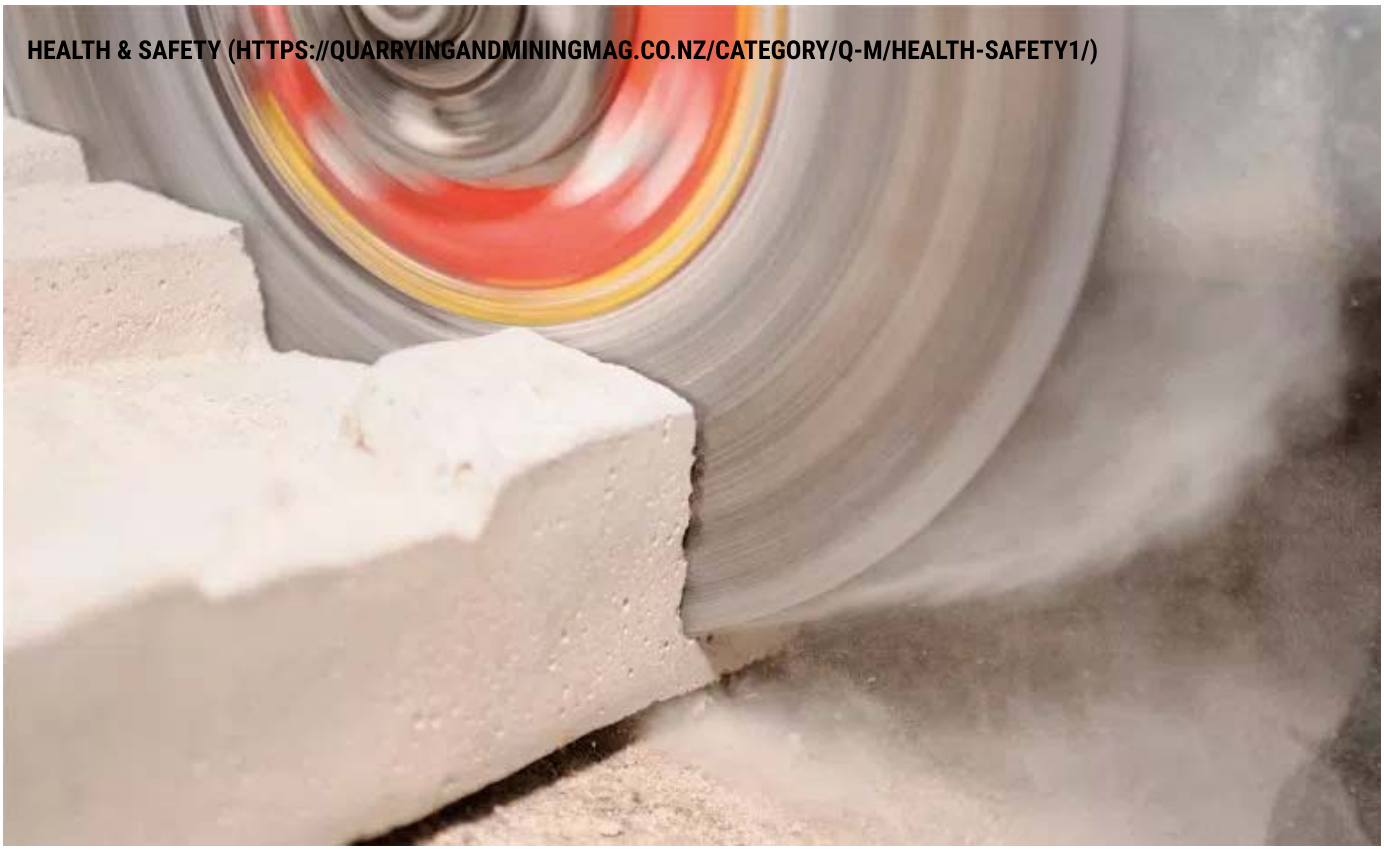

WorkSafe advice on silica dust

MAY 5TH, 2018

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HEALTH & SAFETY (HTTPS://QUARRYINGANDMININGMAG.CO.NZ/CATEGORY/Q-M/HEALTH-SAFETY1/)

According to WorkSafe, construction work has a big potential to produce silica dust that can cause serious lung disease and its removal from a worksite, or exposure control, is essential for worker safety.

Silica is a natural substance found in materials on construction sites, such as concrete, bricks, rocks, stone, sand and clay. Dust containing silica is created when these materials are cut, ground, drilled or otherwise disturbed. If the silica particles in this dust are small enough (known as respirable crystalline silica or RCS) they can be breathed deep into the lungs and cause damage. The dust that can be inhaled is not always visible to the naked eye.

Tasks that may expose construction workers to silica dust include: sawing, hammering, sanding, drilling, grinding and chipping concrete or masonry (bricks, stone and fibre cement products); demolishing concrete and masonry structures; abrasive blasting of concrete and other materials (especially where sand is used as the abrasive); dry sweeping or the pressurised air blowing of concrete and rock; and chipping, hammering and drilling rock. Also the crushing, loading, hauling and dumping of rock.

Breathing in silica dust can cause the lung tissue to scar, a condition referred to as silicosis. This scarring results in a loss of lung function, usually characterised by breathlessness. The effects of silicosis are permanent and may continue to develop even after exposure has stopped.

Once silicosis has developed, there could be an increased risk of chronic obstructive pulmonary disease and tuberculosis.

If a worker has a lengthy exposure to high levels of silica dust, lung cancer may develop. Once silicosis has been diagnosed, the risk of lung cancer increases. Smoking adds to the lung damage caused by silica dust exposure.

Employers have a legal duty to take all practicable steps to ensure employees are safe at work and exposure to silica dust is a workplace hazard that employers must eliminate, isolate or minimise.

As an employer, you should be able to recognise where work tasks may create silica dust. You should then plan ahead to remove the dust or control any worker exposure. Where silica dust is created on a worksite, you should implement: dust control methods; respiratory protection; air monitoring; health monitoring; protective clothing; warning signs; training.

The key to preventing silica exposure is keeping silica dust out of the air.

Water and wet working methods can keep silica dust out of the air, and out of the lungs of your workers. Make water hoses available to wet any dust created before it becomes airborne. Water hoses should always be used, rather than compressed air. Ensure equipment and affected work areas are frequently cleaned with a water hose to protect nearby workers from dust exposure.

Do not dry sweep. Dust should be removed from work areas using vacuums with filters (high-efficiency particulate air HEPA filters).

How can employees protect themselves?

Employers do not have the sole responsibility to manage exposure to silica dust at work. Employees must take all practicable steps to keep themselves, and other people around them safe[3]. As an employee, you should be able to recognise if work tasks that you (or those near you) carry out create silica dust. Where this applies, you should:

• Follow any dust control methods that your employer has put in place. This includes: frequently cleaning affected equipment and work areas; using dust control features and dust collection systems on equipment and tools; reporting any failures of dust control features and dust collection systems on equipment and tools, then stopping any use.

• Correctly wear the respiratory (breathing) protection your employer provides. This includes ensuring it is

Look for dust control features and dust collection systems when purchasing construction equipment. Purchase equipment and tools with water attachments and/or vacuum attachments to control dust at the source. For example, saws used on concrete and masonry should provide water to the blade; machinery (ie, excavators and bulldozers) should have a dust collection system and an air-conditioned cab with a filtered air supply, to isolate the operator from dust.

Ensure workers always use dust control features and dust collection systems on equipment. If these are not working properly, your workers should not use the equipment.

Abrasives used during abrasive blasting should not contain silica. Use metallic shot, slag products or grit for abrasive blasting, instead of sand.

clean and fits properly. To ensure a close-fitting respirator, remove facial hair. A respirator cannot protect you if it doesn't fit properly, so make sure that facial fit testing has been carried out by your employer.

[3] Health and Safety in Employment Act 1992, s 19.

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During abrasive blasting, containment methods such as blast-cleaning machines, cabinets, and local exhaust ventilation should be used.

Respirators should be used together with other dust control methods, not as the primary way to prevent exposure to silica dust. Provide certified respirators and make sure your workers use them to protect their lungs from silica dust.

Ensure the correct respirator is used for the job (dependent on dust levels and particle size). Provide either: a disposable respirator; a half-face respirator; a full-face respirator (this type filters the air); a full-face powered respirator (this type supplies clean air).

When respirators are used at a worksite, you should: carry out facial fit testing on each worker; carry out appropriate maintenance on all respirators to ensure they remain fit for purpose; provide training on the correct use of respirators; keep records that detail respirator use; store respirators in a clean cupboard when they are not in use.

Carry out air monitoring to measure the overall amount of silica dust created at various positions on the worksite and the maximum level of worker exposure (given the use of dust control methods, respirators and other measures). Air monitoring can be carried out by occupational hygienists or other trained personnel. This monitoring will help you select the most appropriate dust control methods and respiratory protection for your workers.

Provide ongoing health surveillance for all your workers who may be exposed to silica dust. Surveillance should include lung function testing and a respiratory questionnaire. Occupational health nurses can provide this service.

It is vital that dusty clothes do not contaminate cars, homes and other areas outside of the worksite.

Ensure workers have disposable or washable clothes to change into at the worksite.

Ensure that before your workers leave the worksite they shower (if possible) or wash with water, and then change into clean clothes. Do not allow your workers to take dusty clothing home to wash. If you are washing this clothing, take care that dust exposure does not occur.

Warning signs

Post warning signs to mark the boundaries of work areas where silica dust is created. These signs should warn your workers about the hazard and specify any protective equipment required.

Training

Provide your workers with training on silica dust. All training should include information about: the health effects of exposure to silica dust; work practices to follow when silica dust is created at a worksite; the appropriate use and care of protective equipment (including protective clothing and respiratory protection).

This article was first published in the April-May issue of *Q&M*.

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