



## **Preventing Silicosis: Keeping Ontario's Workplaces Healthy**

### **Workplaces that have exposure to silica**

When a worker inhales a lot of dust from silica for a long time, the dust may cause changes in the lungs. The changes can lead to silicosis (lung scarring). Silicosis cannot be cured. In some workplaces, silica is used in the work process. In other jobs, silica dust is a byproduct of the work.

Workers may be exposed to silica if they work in industries such as:

- manufacturing
- road building
- quarrying or mining
- foundries
- shipyards
- construction or demolition

### **Preventing silicosis**

To prevent silicosis, the employer should look at the requirements of the:

- *Occupational Health and Safety Act (OHSA)*
- Regulation Respecting Silica.

### **The OHSA outlines the responsibilities of the:**

- employer
- worker
- joint health and safety committee.

These duties are related to potential exposure to silica dust. They deal with the hazard in terms of:

- recognition
- evaluation
- control.

### **Regulation Respecting Silica**

The Regulation Respecting Silica has requirements for both employers and workers.

#### **Employers**

Employers must conduct an assessment to determine whether their workers are exposed to silica that can be inhaled (respirable silica dust). This must be done with the joint health and safety committee. As well, the employer must write a report of the findings and develop a silica control program.

The *assessment* must look at:

- how materials that contain silica are processed, handled and stored
- how much silica workers are exposed to
- how exposure is controlled.

The *written report* must:

- summarize the information gathered
- analyze the data.

Employers must develop a *program to control* the workers' exposure to silica, if the assessment shows:

- workers are likely to inhale (breathe in) silica and
- their health may be affected by it.

The silica control program must include provisions for :

- controls to prevent exposure to harmful silica dust
- monitoring of workers' exposure
- personal records of each worker's exposure
- medical check-ups and tests for exposed workers
- training on the health effects of silica and required procedures
- worker training on the selection, use and care of respirators.

A silica control program is not required when the assessment shows that:

- workers are likely to inhale silica, but
- workers' health will not be affected because the exposure is low.

Even if a silica control program is not required, the employer should consider following some or all parts of the control program. This should be done with the joint health and safety committee. The program will keep exposure as low as possible for all workers.

### **Workers**

Workers must follow the work practices and hygiene practices set out in the silica control program. This includes the use of respirators when required.

### **Controls for silica**

#### **Controls at the source**

As with all hazardous conditions in the workplace, the best control is at the source of the problem. Look for work areas in which silica may be used in the process. In particular look for ways to:

- use a safer product, for example:
  - in abrasive blasting, make sure that the sand is not silica and contains less than 1% crystalline silica
  - in grinding operations, replace sandstone wheels with aluminum oxide wheels.
- reorganise the work process to remove the source of the silica dust, for example:
  - make the process automatic
  - buy safer equipment
  - enclose processes that involve silica
  - wet all items before maintenance work begins
  - use wet rather than dry operations
  - remove or enclose a hazardous step from the process
- use automatic shut-off valves process shut-down or warnings in case the ventilation system stops working.

### Controls along the path to the worker

It is also effective to use controls to keep the hazard from reaching the worker, for example:

- use local exhaust ventilation
- enclose processes that generate silica dust such as in abrasive blasting or in transport
- design and maintain ventilation systems to keep the level of silica low
- provide general dilution ventilation with the right filters or scrubbers to clean the air.

### Controls at the worker

The last choice of controls requires workers to take extra precautions. These precautions include using:

- personal protective equipment (PPE)
- good personal hygiene
- hazard awareness training.

### Personal protective equipment (PPE)

PPE can be useful for short-term exposures. Workers must be trained to wear the equipment properly, and it must be maintained to make sure that it does its job. Employers must provide training and instruction on proper care and use of PPE. Employers requiring the use of respirators must have a respiratory protection program in place.

### Good personal hygiene

The employer should encourage good personal hygiene practices by providing:

- convenient places to change, to wash, to store clothing and to eat
- convenient places outside dusty areas for workers to wash their hands and faces before eating, drinking or smoking
- warning signs to mark work areas that may have silica that can be breathed in.

### Hazard awareness training

Hazard awareness begins with orientation then moves on to ensuring workers have the information they need to start and continue working safely.

Employers should make sure that all workers know:

- about hazards to their lungs
- about job activities that may expose them to silica dust
- how to use safety equipment, such as respirators and automatic shut-off valves
- how to reduce dust in the air for example: wet dusty material before cleaning, and use high efficiency vacuum filters.

Workers also need to know about job practices, such as:

- standing upwind of all opening, dispensing and mixing operations when outdoors
- using the right tools to open containers
- using disposable or washable protective clothes
- handling, labelling and storing silica safely.

Employers must also:

- have policies about training workers to use safe work practices (e.g., WHMIS) and personal protective equipment
- give workers material safety data sheets (MSDS) for silica, masonry products, alternative abrasives and any other silica products they may be exposed to
- make all written materials available for workers to read
- update and repeat training regularly and make it part of health and safety routine and should
- use several training techniques, including individual instruction, information meetings, written materials (e.g., posters, booklets), videos, written guidelines.

### **Return to work after a diagnosis of silicosis**

After a claim is filed for silicosis, an adjudicator works with an occupational medicine consultant from the Workplace Safety and Insurance Board. Together, they:

- make sure that the diagnosis is correct
- find out how much damage there is to the lungs
- look for any work restrictions to prevent increased silicosis.

If the worker can return to work, good prevention practices will ensure that he or she can work safely. Whether the worker can stay on the job depends on how severe the silicosis is and the treatment. The worker's doctor decides if and when the worker can return to his or her former job. The doctor also decides whether any changes or restrictions are needed.

The WSIB works with the employer to make sure that the worker can return to work safely. For more information on treatment of silicosis and return to work, see *Work-related Silicosis: Facts for Workers in Ontario*.

### **Want more information about preventing silica exposure at work?**

- review the Ontario Ministry of Labour's Guide to Silica Regulation, available from [www.gov.on.ca](http://www.gov.on.ca)
- purchase ACGIH's Industrial Ventilation - A Manual of Recommended Practice, 21st or later edition, available from [www.acgih.org](http://www.acgih.org)
- see the WSIB's Resource Sheet for Workplace Health and Safety available from 1-800-663-6639
- find out details about the *Occupational Health and Safety Act* at the Ministry of Labour's website [www.gov.on.ca/LAB/english/hs](http://www.gov.on.ca/LAB/english/hs)
- contact the Canadian Centre for Occupational Health and Safety, 1-800-668- 4284 or [www.ccohs.ca](http://www.ccohs.ca).

### **Workplace Safety and Insurance Board**

Ontario's Workplace Safety and Insurance Board (WSIB) plays a key role in the province's occupational health and safety system. Funded by employers, the WSIB is one of the top 10 disability insurers in North America. In addition to a strong prevention mandate, the WSIB provides insurance for injuries and illnesses incurred in workplaces covered under the *Workplace Safety and Insurance Act* and supports early and safe return to work for injured workers.

This information is available in several languages by calling our information hotline at 416-344-4999 .... toll-free 1-800-465-5606 or Telephone Service for the Deaf (TTY): 1-800-387-0050  
Pour obtenir un exemplaire en français, composez le 1-800-465-5606.