



Controlling Exposures to prevent occupational lung disease in the construction industry



Stonemason

HAZARDS AND RISKS

When different types of stone are worked by cutting, grinding and chiseling with hand and power tools, airborne dust is generated that can cause serious lung conditions if inhaled over time. Some stone masonry trades may involve the application of fine decorative detail to stone, which often requires working very closely to the dust source.

Stone dust and respirable crystalline silica (RCS)

Stone dust contains varying amounts of silica, and comprises a mixture of different sized particles. Breathing in the smaller respirable sized fraction of the silica dust – respirable crystalline silica (RCS) - can result in the development of serious lung diseases, including fibrosis, silicosis, chronic obstructive pulmonary disease (COPD) and lung cancer. These diseases may cause permanent disability and early death. Inhaling any dust can lead to lung irritation, asthma and other acute and chronic respirable conditions.

CONTROL OPTIONS

Engineering controls

Local exhaust ventilation (LEV):

- Enclose the dusty process in a down draught or cross draught booth so that dust laden air is drawn away from the work area.
- Use "on-tool" LEV: also known as a "shroud" - which encloses the grinding wheel. A vacuum source is attached to the shroud to remove dust generated by the grinder at the source of emission.

Safe working methods

Water suppression:

- Pre-soak stone to minimise dust creation and apply running water to the process via on-tool suppression to further reduce exposures.

PPE

- RPE should be compatible with any other PPE. Wearers of tight fitting RPE must be face fit tested to ensure the RPE affords each individual the anticipated level of protection.
- RPE selection should be made in line with the risk assessment and selected in accordance with CSA Z94.4-11 *Selection, Use and Care of Respirators*.

Preferred control measures

- Water suppression with supplemental RPE.
On tool LEV with supplemental RPE for grinding work.

MANAGING THE RISK

Training & communication, supervision, maintenance & testing of controls and air

monitoring* are all vital aspects of managing the risk, in addition to health surveillance which can be a requirement in certain circumstances.

See our introductory [Respiratory Health Hazards in Construction Fact Sheet Series: Overview](#) for more information about what things to consider and implement.

Air monitoring*

Air monitoring is a specialist activity. It may be needed as part of an exposure risk assessment, as a periodic check on control effectiveness and to assess compliance with relevant occupational exposure limits, or where there has been a failure in a control (for example if a worker reports respiratory symptoms).

A qualified occupational hygienist or occupational hygiene technologist can ensure exposure monitoring it is carried out in a way that provides meaningful and helpful results.