BREATHE FREELY

Controlling Exposures to prevent occupational lung disease in the construction industry

Demolition Operative

HAZARDS AND RISKS

The use of explosives and 360˚ machines to demolish structures or to loosen, remove, or displace earth, rock, or other materials can generate high levels of airborne dust, as well as settled dust on the ground, surfaces, clothing and vehicles which can later be propelled into the air by impact or movement. Soft strip demolition work can also produce high dust levels because of the tasks that are usually involved, such as grinding, drilling, cutting, chiselling and blasting.

Construction dust

Construction dust is a general term and includes dust from soil and building materials. Breathing in any dust can (over time) cause serious lung disease such as chronic obstructive pulmonary disease (COPD) which includes chronic bronchitis and emphysema. There are also dusts, such as silica dust or wood dust, that can cause specific serious lung diseases.

Silica Dust/ Respirable crystalline silica (RCS)

Silica is present in large amounts in most rocks, sand and clay, and in products such as bricks, concrete and mortar. Some of the dust created by demolition activities is fine enough to be breathed deeply into the lungs; this is called respirable crystalline silica (RCS). Exposure to RCS over many years or in extremely high doses can lead to serious lung diseases, including fibrosis, silicosis, COPD and lung cancer. These diseases cause permanent disability and early death.

Wood dust

Dust from softwood, hardwood, and wood-based products such as MDF and chipboard can cause asthma which is a serious, debilitating, and sometimes life-limiting condition. Exposure comes from cutting, machining and drilling wood and from settled dust that is later disturbed. Fine dust particles are most likely to damage the lungs. Some wood types can cause cancer. Wood dust exposure may also cause dermatitis. The dermatitis risk is high for softwoods.

Asbestos*

Demolition workers may come into contact with or disturb a number asbestos containing materials (ACMs). Inhalation of asbestos fibres can cause mesothelioma, asbestos-related lung cancer, asbestosis, and pleural thickening - all fatal or serious and incurable diseases that take many years to manifest.

CONTROL OPTIONS

Engineering controls

- Control dust at source through local exhaust ventilation (LEV) or other engineering control equipment, or on-tool extraction where possible, though containment/LEV is unlikely to be feasible for outside work.
- Enclosed spaces may also need general mechanical ventilation to remove dusty air.
- Use vacuum attachments fitted to appropriate extraction units for cleaning operations.

Safe working methods

- Eliminate or minimise dust creation through water spray for damping down work areas beforehand, water suppression for soft strip demolition tasks, and damping down during rubble and debris removal.
- Use covered chutes and skips where needed and screened off areas to prevent dust spreading.
- Choose work methods that avoid or limit grinding, drilling, cutting, chiselling and blasting of stone or wood wherever possible.
- Clean up regularly using vacuums or wet cleaning; avoid dry sweeping or use of compressed air to remove dust from clothes.
- Limit the number of people who need to be in the work area.

PPE

- Use respiratory protective equipment (RPE) appropriate to the location, duration and type of work.
- RPE should be selected in accordance with CSA Z94.4-11 *Selection, Use and Care of Respirators.*

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 is carried out in a way that provides meaningful and helpful results.