BREATHE FREELY

Controlling Exposures to prevent occupational lung disease in the construction industry

Roofer

HAZARDS AND RISKS

Roofing work is varied – covering structures with shingles, slate, asphalt and other materials; spraying roofs, sidings, and walls to bind, seal, insulate, or soundproof; demolishing or repairing asbestos cement roofs; cutting wooden battens; cleaning roofs and clearing out roof spaces. It can, therefore, involve exposure to many different harmful substances which might generate hazardous dusts, or give off toxic fumes and vapours. The biggest respiratory health risks come from asbestos and silica.

Asbestos*

Roofers may come into contact with or disturb a number asbestos containing materials (ACMs) during maintenance work. Asbestos is classified as a category 1. Inhalation of asbestos fibres can cause mesothelioma, asbestos-related lung cancer, asbestosis, and pleural thickening - all fatal or serious and incurable diseases that can take many years to develop.

Silica

Silica occurs in many types of stone and in concrete, including roof tiles and slate. In dust form it will be released during cutting or grinding, and when sweeping/cleaning work areas. Inhaling fine silica dust (respirable crystalline silica or RCS) can lead to serious lung diseases, including fibrosis, silicosis, chronic obstructive pulmonary disease (COPD) and lung cancer.

Bitumen & asphalt

Bitumen (aka asphalt) is commonly used as an adhesive to bond membranes onto the deck or insulation board. When inhaled, bitumen fume can cause irritation of the respiratory tract, eyes and skin, burns, and possibly lung cancer.

Glues and solvents

There are a variety of roofing products that use or contain glues and solvents which, when breathed in as vapour, can irritate the lungs. Exposure can also affect co-ordination and so increase the likelihood of accidents. Very high exposures can cause unconsciousness and even death, for instance where adhesives are used in unventilated confined spaces.

Wood dust

Breathing in wood dust can cause asthma, a serious, debilitating, life-limiting condition, as well as irritation, allergic rhinitis and, rarely, nasal cancer, as well as impaired lung function.

Biological hazards

Breathing in dust from dried bird droppings, often found in roof spaces, can cause psittacosis which in turn can lead to severe pneumonia.

CONTROL OPTIONS

Elimination/prevention

- Information on the presence of asbestos should come from the premises' asbestos management plan and asbestos register. For information on work tasks involving asbestos and how to safely carry them out, refer to the applicable OH&S regulations. (e.g. requirements for employers to notify the relevant regulatory enforcing authority, designate areas where the work is being done, ensure medical examinations take place, maintain health records, etc.)
- Do not exceed the recommended operating temperature for the asphalt mix whilst roof laying, as this may cause excessive fumes

Safe working methods

- Choose methods that avoid or limit cutting, grinding, drilling, chiselling or abrasion of silica/ wood materials wherever practicable.
- Set up a cutting area on surrounding scaffolding not on the roof itself; where practical apply this also to valleys.
- Eliminate or minimise dust creation through wet working: damp down the work area beforehand, use water suppression for repair/demolition tasks, and damp down during debris removal and cleaning. Where tile resizing is needed, use water to stop the release of dust into the air (eg. modern cut-off saws have an attachment for a water hose).
- Avoid high pressure spraying for dust and debris removal, as this can release dust into the air and make contaminated slurry difficult to contain.
- Apply glues and solvents by brush, rather than spraying.
- Use covered chutes and skips and, where needed, screen off areas to prevent dust spreading.
- Safely and regularly dispose of asbestos waste from site.
- Keep workers and others not directly involved in the task as far away from the source of the bitumen fumes as possible.

PPE

- For asbestos work, specific PPE as described by OH&S regulations (e.g. disposable coveralls , gloves, and foot protection) should be worn and disposed of as asbestos waste.
- 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*.

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.