BREATHE FREELY

Controlling Exposures to prevent occupational lung disease in the construction industry

Painter/Decorator

HAZARDS AND RISKS

Painting and decorating work can involve exposures to many different harmful substances during regular tasks such as the removal of old finishes, surface preparation, and mixing and application of primer, undercoat and finishing coats and adhesives. The biggest respiratory health risks come from the hazardous dusts, mists, fumes and vapours which can be generated by these activities when working on or with asbestos, silica, hardwood, paints, gypsum, paint solvent, chromate in primers and isocyanates. In addition, there is a known small but measurable increased risk of lung (and bladder) cancer amongst professional painters, the cause of which has not been identified but cannot wholly be explained by exposure to asbestos or on smoking (both agents being known causes of lung cancer).

Asbestos

Decorators may come into contact with or disturb a number asbestos containing materials (ACMs) during refurbishment/maintenance work on buildings, particularly those built before 2000. Asbestos is classified as a category 1 carcinogen. Inhalation of asbestos fibres can cause mesothelioma, asbestos-related lung cancer, asbestosis, and pleural thickening - all potentially fatal or serious and incurable diseases that take many years to manifest.

Silica and respirable crystalline silica (RCS)

Silica occurs in many types of stone and in concrete, and in dust form can be released during abrasive blasting or sanding tasks. Inhaling fine silica dust (RCS) can lead to serious lung diseases, including fibrosis, silicosis, chronic obstructive pulmonary disease (COPD) and lung cancer. Over 500 construction workers die every year from exposure to silica dust.

Chromium (VI) compounds (sometimes known as hexavalent chromium or CrVI)

Chromate from primer paints can be inhaled via dust, mist or spray given off during application, and exposure can lead to ulceration of mucous membranes as well as an elevated risk of lung cancer. Exposure may also cause occupational asthma.

Other dusts, mists and sprays

Gypsum dust from drywall materials, hardwood dust and paint pigment dusts can all be generated by stripping, sanding, brushing and burning activities, with potential respiratory effects from exposures including irritation, allergic rhinitis, shortness of breath, as well as COPD and nasal cancer. Inhaling solvents can lead to irritation and shortness of breath; and breathing in isocyanates, through roller, brush or spray paint applications, can cause allergic rhinitis and asthma.

CONTROL OPTIONS

Removing old finishes by stripping, sanding, wire brushing, burning and/or abrasive blasting.

Smoothing surfaces using sandpaper, scrapers, brushes, steel wool and/or sanding machines

Engineering controls

- When dry sanding with hand tools use on–tool extraction.
- Use the appropriate industrial vacuum cleaner (HEPA filter) for cleaning up dusts.

Safe working methods

- *DO NOT USE THESE TECHNIQES ON ACMs!
- Wet methods preferred, including wet blasting & avoid burning where possible. For wet blasting use alumina or non-sand abrasives.
- Ensure good general ventilation by natural or mechanical means.
- Dry sanding with block on pole if possible.

PPE

- Impervious gloves and overalls should be considered for all work.
- For dry sanding, when using penetrating stripper fluid or gel and for burning, 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*.
- For blasting, consider additional PPE such as gauntlets, safety boots & a slicker suit; use a blasting helmet with bib and compressed air breathing supply as determined by the risk assessment.

Mixing & applying solvent-based primers and paint coatings using spraying, roller and brush applications

Engineering controls

- For spraying choose correct type of spray equipment for the task; for poorly ventilated areas, local exhaust ventilation (LEV) will be required.

Safe working methods

- Roller and brush application methods preferred.
- Consider alternative low hazard solvents first.
- Ensure good general ventilation for all types of solvent application.
- Segregate spraying areas & minimise access to non essential workers.

PPE

- RPE selection should be made in line with the risk assessment and with advice from the supplier sought if needed.
- For handling chemicals such as paints or solvents and/or spraying operations, 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*.

Spraying of specialised epoxy & isocyanate-based paints

Engineering controls

- Select correct type of spray equipment for the task.
- Use LEV if at all possible.

Safe working methods

- Ensure good general ventilation and segregation of spraying area.

PPE

- Impervious gloves and overalls recommended for all work.
- While handling specialist 2-pack paints, RPE must be provided as a constant flow air-fed breathing apparatus (BA). 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.