BREATHE FREELY

Controlling Exposures to prevent occupational lung disease in the construction industry

Plasterer

HAZARDS AND RISKS

The main respiratory hazard associated with plastering activities is exposure to airborne plaster dust when mixing the material from a dry state to wet in preparation for use, and during sanding down of dried materials. This is because plastering materials contain composites, such as calcium sulphate hemihydrate, limestone and clays, small amounts of silica and mica, and sometimes hydrated lime. Inhalation of dust from these materials can lead to respiratory complaints and potentially serious diseases in the long term. Inadvertent disturbance of asbestos containing materials (ACMs) is also a risk.

Airborne dusts

Plaster dust (bagged material)
Can cause irritation to the respiratory system, which in some cases may lead to occupational asthma. The long term health effects of regularly inhaling plaster dusts during mixing are unclear at present but likely to include chronic obstructive pulmonary disease (COPD – see below).

Inhaling dust from sanding of plaster materials
Can lead to occupational asthma and COPD, which includes serious conditions such as chronic bronchitis and emphysema, which is irreversible.

Silica
Inhaling fine silica dust, known as respirable crystalline silica (RCS) can also lead to serious lung diseases, including fibrosis, silicosis, COPD and lung cancer. These diseases can cause permanent disability and early death. It is estimated that over 500 construction workers die every year from exposure to silica dust.

Asbestos*

Plasterers can be at risk of exposure to asbestos from preparation of surfaces such as artex (especially when sanding or grinding tools are used) and disturbing asbestos containing materials (ACMs), particularly when working in buildings built before 2000. Asbestos is classified as a category 1 carcinogen and causes around 5000 work-related deaths each year in the UK. Inhalation of airborne asbestos fibres can cause mesothelioma, asbestos-related lung cancer, asbestosis, and pleural thickening - which are fatal, serious and incurable diseases which take many years to manifest.

CONTROL OPTIONS

Elimination/prevention

Asbestos*

- The aim is to avoid exposure completely. Information on the presence of asbestos should come from the premises' asbestos management plan and asbestos register.
- For information on non-licensed work tasks involving asbestos (eg. working with textured coverings) and how to safely carry them out, refer to HSE's HSG210: Asbestos Essentials: *www.hse.gov.uk/asbestos/essentials/index.htm*
- For high risk asbestos work that must be carried out by an HSE licensed contractor, please refer to the separate BOHS respiratory health hazards fact sheet, the *'Licensed Asbestos Removal Worker fact sheet'**.

Engineering controls

- Use general mechanical ventilation to prevent accumulation of airborne dust and transfer dusts to outside.
- Use powered sanding tools with integrated, or "on-tool", dust extraction.

Safe working methods

- Work in a well ventilated area, ensuring good natural ventilation that allows dusts to readily disperse.
- Use hand tools in place of power tools, if feasible, for sanding tasks.
- Limit the number of persons near dusty work.
- Rotate workers undertaking dusty tasks.

PPE

- Respiratory protective equipment (RPE) should be used to supplement the above controls where necessary eg; if good ventilation cannot be achieved, or if sanding is being carried out. RPE with particulate filters (with FFP3 rated protection) should be worn.
- Tight fitting RPE users should be subject to face fit tests to ensure the RPE affords each individual the anticipated level of protection.

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 a COSHH assessment, as a periodic check on control effectiveness and to assess compliance with relevant WELs, or where there has been a failure in a control (for example if a worker reports respiratory symptoms). A qualified Occupational Hygienist can ensure it is carried out in a way that provides meaningful and helpful results.

Also, see HSE leaflet G409,
Exposure measurement: Air sampling.
www.hse.gov.uk/pubns/guidance/g409.pdf

See reverse for Workplace Exposure Limits (WELs)

BREATHE FREELY

Controlling Exposures to prevent occupational lung disease in the construction industry

Plasterer

WORKPLACE EXPOSURE LIMITS (WELs) & EXPOSURE LEVELS

Agent or substance	Control/Exposure Limit	Exposure Levels
Calcium sulphate hemihydrate/ hydrated lime	Total inhalable: 5mg/m3 (8 hour TWA)	Exposure levels may be significant during frequent or prolonged dusty tasks, especially in poorly ventilated spaces/areas.
Silica - RCS	0.1 mg/m3 (8 hr TWA)	Dry work with high silica-content materials – such as sandstone - causes the highest risk.
Asbestos (all types)*	0.1 fibres/ml (4 hr TWA) 0.6 fibres/ml (10 min TWA)	The aim should be to avoid any exposure. Some non-licensed work with asbestos may be done by trained personnel*.

Further information

- Construction dust: *www.hse.gov.uk/pubns/cis36.pdf*
- Controlling construction dust with on-tool extraction: *www.hse.gov.uk/pubns/cis69.pdf*
- COSHH Essentials: Hand-held sanding machines: *www.coshh-essentials.org.uk/assets/live/wd07.pdf*
- COSHH Essentials: Health surveillance for those exposed to respirable crystalline silica (RCS): *www.hse.gov.uk/pubns/priced/hsg258.pdf*