BREATHE FREELY IRELAND

Controlling exposures to prevent occupational lung disease in CONSTRUCTION

Glazier/Glass Fitter

HAZARDS AND RISKS

The biggest risk to a glazier's respiratory health is likely to be from asbestos. A glass fitter may frequently work with domestic soffits and rainwater goods which contain asbestos cement. Other hazardous dusts on a construction site arise from the various grinding, drilling, cutting, chiselling, painting, spraying and other activities. [Note that lead in old paint may be a health risk when removed by heating or sanding – lead poisoning can be serious].

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 silica dust 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 with the WHO/ILO* estimating that approximately 30 people die annually in Ireland from occupational exposure to respirable crystalline silica (RCS).

Resins, solvents and adhesives

Tiling workers can be exposed to these substances which may cause ill-health effects such as headaches, dizziness, irritation to the skin, eyes, lungs and throat, and asthma (depending on the specific substance handled). The safety data sheet (SDS) for the product(s) in use should be reviewed.

Wood dust

Dust from softwood and hardwood, and wood- based products such as MDF and chipboard can cause asthma, which is a serious, debilitating, and sometimes life-limiting condition. The finest dust, for example from sanding or disturbance of settled dust, is most likely to damage the lungs if breathed in. Some types of wood dust are also known to cause cancer. Wood dust exposure may also cause dermatitis. The dermatitis risk is high for softwoods.

Asbestos

Glass fitters may come into contact with, or disturb, asbestos containing materials (ACMs) during maintenance work, particularly if the premises were built before 2000, when asbestos cement sheets and asbestos insulating boards were commonly used around windows in soffits and facias. Asbestos is classified as a category 1 carcinogen and can be linked to over 50 reported cases of mesothelioma in Ireland each year. The WHO/ILO* estimate that approximately 400 people die annually in Ireland from occupational exposure to asbestos

The WHO is the World Health Organisation and the ILO is the International Labour Organisation. They are both are United Nations agencies.

CONTROL OPTIONS

Inhalation of asbestos fibres can cause mesothelioma, asbestos-related lung cancer, asbestosis, and pleural thickening; all fatal or serious and incurable diseases which take many years to manifest.

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. Prior to the commencement of any construction work to a premises an asbestos survey should be completed by a competent asbestos surveyor. Strict regulations are in place governing work activities that are like to expose workers to dust from asbestos or ACMs. For information on work tasks involving asbestos refer to the HSA's 'Asbestos-containing Materials (ACMs) in Workplaces. Practical Guidelines on ACM Management and Abatement'.

Safe working methods

- Use water suppression for wood and stone cutting and drilling.
- Keep workers away from dust sources unless directly involved in the task.
- Ensure good general ventilation wherever possible.
- Follow asbestos guidelines if worker comes into contact with asbestos or asbestos containing materials.

MANAGING THE RISK

Training & communication

Supervision, maintenance and 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.

Air monitoring

Air monitoring is a specialist activity. It may be required as a result of a chemical agents risk assessment, as a periodic check on control effectiveness and to assess compliance with relevant Occupational Exposure Limit Values (OELVs), 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.

Refer to the current Health and Safety Authority's 'Code of Practice' for relevant OELVs.

To obtain the most accurate and up-to-date information, it is recommended to visit the Health and Safety Authority (HSA) website or contact the HSA directly. The website may have the latest versions of the relevant code of practice, guidelines, and regulations.

https://www.hsa.ie

See reverse for Occupational Exposure Limit Values (OELVs)

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OCCUPATIONAL EXPOSURE LIMIT VALUES (OELVs) & EXPOSURE LEVELS

Agent or substance	Control/Exposure Limit	Exposure Levels/Comments
Asbestos (all types)	0.1 fibres/cm^3 (8-hr reference period)	The aim is to avoid exposure. There is a high risk of exposure from particular ACMs, including sprayed asbestos coatings and asbestos insulation, which may be disturbed by workers when demolishing or renovating buildings built before 2000. An asbestos survey must be completed by a qualified independent Asbestos consultant prior to any construction work taking place.
Construction Dusts Total inhalable Respirable	 10 mg/m^3 (8-hr reference period) 4 mg/m^3 (8-hr reference period)	
Silica - RCS	0.1 mg/m^3 (8-hour reference period).	Different types of stone contain different amounts of silica, with sandstone (70 - 90% silica) and concrete (anything from 25 - 75% silica) typically containing the most, granite, slate and brick at around 30% and limestone and marble 2% silica. All dust exposure levels are affected by the frequency and duration of the work and are likely to be higher in poorly ventilated spaces. Dry working without extraction control is likely to produce the highest levels of dust. Health risks to electricians are likely to be significant only if exposures are frequent and prolonged.
Wood Dust Hardwood Softwood	 2 mg/m^3 (8-hour reference period) 5 mg/m^3 (8-hour reference period)	Wood dust is capable of causing several occupationally acquired respiratory diseases including asthma and cancer. If a mix of wood dust contains both softwood and hardwood the OELV for hardwood applies to all wood dust in the mixture. All wood dust levels are affected by the frequency and duration of work. Engineering controls (LEV, on-tool extraction) should be used to minimise exposure.

Further information

Asbestos Containing Materials (ACMs) in Workplaces – Practical Guidelines on ACM Management and Abatement - Health and Safety Authority (hsa.ie)

Current Chemical Agents Code of Practice 2024 - Health and Safety Authority (hsa.ie)

Guidelines on Occupational Asthma - Health and Safety Authority (hsa.ie)

Guidelines on Occupational Dermatitis - Health and Safety Authority (hsa.ie)