



Controlling Exposures to prevent occupational lung disease in the construction industry



Form Worker

HAZARDS AND RISKS

Site carpentry and form working typically involves cutting timber using power saws, hand saws and woodworking machines, all of which generate wood dust which can be hazardous to health when breathed in. Wood dust and other general dust can also be created by tasks such as digging of post holes to set supporting structures, and also cleaning activities.

Wood dust

Wood can be in many forms such as softwood and hardwood, and wood-based products such as MDF and chipboard. Inhaling wood dust can have many adverse effects on the respiratory tract and lungs. "Respirable" dust is the finest dust, that penetrates to the gas exchange region of the lung and is most likely to cause damage. Of particular concern, therefore, is breathing in fine airborne dust eg; arising from sanding or disturbance of settled wood dust; this may cause asthma, which is a serious, debilitating, and sometimes life-limiting condition. Exposure to any type of wood dust can also cause irritation, allergic rhinitis (runny nose) and, very rarely, nasal cancer, as well as impaired lung function. Wood dust exposure may also cause dermatitis. The dermatitis risk is high for softwoods.

General dust

Inhaling general dust particles can cause chronic obstructive pulmonary disease (COPD) and cause or exacerbate respiratory irritation and breathing problems.

CONTROL OPTIONS

Elimination/prevention

- Use pre-cut materials wherever possible.

Engineering controls

- Use on-tool dust extraction (LEV) for hand held tools.
- Install appropriate LEV on bench or semi permanent machines; stand-alone dust collectors can be considered for occasional use.
- Use H or M class ATEX-approved vacuum cleaner (HEPA filter) with antistatic hoses when not wet cleaning.

Safe working methods

- Ensure good general ventilation to the work area; work outdoors if feasible.
- Set up dedicated work areas with restricted access to other workers.
- Clean up regularly using vacuums or wet cleaning; avoid dry sweeping or use of compressed air to remove dust from clothing.
- Minimise dust release eg. through damping down of ground areas and post holes when digging.

PPE

- If local dust extraction cannot be used with power saws or machines, or if hand sawing is carried out in enclosed or poorly ventilated areas, respiratory protective equipment (RPE) is required. As a minimum, a FFP3 disposable mask (APF20) should be used or PAPR (of TH2 or higher classification) if the task is undertaken for periods over one hour

Preferred control methods

- Use pre-cut materials.
- Carry out hand sawing outdoors.
- Provide on-tool extraction and LEV for machinery, in dedicated work areas.

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.

The decision to undertake exposure monitoring should be made in accordance with HSE's monitoring strategies outlined in HSG173. In some situation, qualitative or semi-quantitative methods may be suitable. See also COSHH regulation 10 ACOP which details when exposure monitoring is necessary or unnecessary.

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



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WORKPLACE EXPOSURE LIMITS (WELs) & EXPOSURE LEVELS

Agent or substance	Control/Exposure Limit	Exposure Levels/Comments
Hardwood Dust	3 mg/m ³ (8 hour TWA)	Capable of causing cancer. Capable of causing occupational asthma. If hardwood dusts are mixed with other wood dusts, the WEL shall apply to all the wood dusts present in that mixture. 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 controls is likely to produce the highest levels of dust.
Softwood Dust	5 mg/m ³ (8 hour TWA)	Capable of causing occupational asthma. If softwood dusts are mixed with hardwood dusts, the WEL for hardwood dusts shall apply to all the wood dusts present in that mixture. 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 controls is likely to produce the highest levels of dust.

Further information

- Wood dust: Controlling the risks: www.hse.gov.uk/pubns/wis23.pdf
- Wood dust: Selecting suitable respiratory protective equipment: www.hse.gov.uk/pubns/wis14.pdf
- Controlling construction dust with on-tool extraction: www.hse.gov.uk/pubns/cis69.pdf
- COSHH Essentials: Circular bench saws: <https://www.hse.gov.uk/pubns/guidance/wd2.pdf>
- COSHH Essentials: Cross-cut saws: <https://www.hse.gov.uk/pubns/guidance/wd3.pdf>
- On video: How to improve dust control at circular saw benches: www.youtube.com/watch?v=_4kyohTbNTQ&feature=youtu.be