



Wood dust: hazards and precautions

Woodworking Sheet No 1 (rev)

Introduction

This information sheet is one of a series prepared by the HSE's Woodworking National Interest Group (NIG). Wood dust consists of tiny particles of wood produced during the processing and handling of wood, chipboard, hardboard and other composite boards. The elimination or control of risks from wood dust is required by the Health and Safety at Work etc Act 1974, the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR)¹ and the Control of Substances Hazardous to Health (COSHH) Regulations 2002.²

Activities likely to produce high dust levels include:

- machining operations, particularly sawing, routing and turning;
- sanding, by machine and by hand;
- using compressed airlines to blow dust off furniture and other articles before spraying;
- hand assembly of machined/sanded components;
- any operations involving composite boards, eg medium-density fibreboard (MDF);
- the bagging of dust from dust extraction systems; and
- factory cleaning, especially if compressed airlines are used for blowing dust from surfaces etc.

What are the hazards?

Health

The following health problems are among the effects associated with exposure to wood dust:

- skin disorders;
- obstruction in the nose, and rhinitis;
- asthma;³
- a rare type of nasal cancer.

Regulation 6(1) of the COSHH Regulations^{2,4} requires an assessment to be made (and normally recorded) of risks to health associated with wood dust, together with any action needed to prevent or control those risks.

Regulation 7(1) goes on to say that exposure to wood dust should be prevented, or where this is not reasonably practicable, adequately controlled.

Hardwood dust and softwood dust have been assigned maximum exposure limits (MELs) of 5 mg/m³ (8-hour time-weighted average) under the COSHH Regulations. Therefore exposure by inhalation to wood dust should be reduced so far as is reasonably practicable and in any case below the MEL. In COSHH, hardwood dust is defined as a carcinogen. Regulations 7(3) and 7(5) specify additional requirements for the control of carcinogens.

Fire/explosion

Each year premises and plant are severely damaged or destroyed by wood dust fires and explosions. Concentrations of small dust particles in the air can form a mixture that will explode if ignited. Such concentrations usually occur in dust extraction equipment which can be destroyed unless special precautions are taken. Such an explosion can also dislodge dust deposits that may have accumulated on walls, floors and ledges which in turn can ignite causing a secondary explosion.⁵

Wood dust will also burn readily if ignited. Fires can be started by badly maintained heating units, overheated electric motors, and sparks from other sources such as open wood burning stoves and cigarettes.

Safety

Wood dust on the floor can cause tripping or slipping. Vision can be impaired by airborne chips and dust generated during machining and sanding operations.

Precautions

Health

If exposure to wood dust cannot be prevented altogether, then assess the risk to health from exposure to airborne dust by:

- finding out if exposure to dust is being adequately controlled in your workplace. A dust lamp can be used to show up the dust and where it is coming from;⁶
- where necessary carrying out dust sampling⁷ (your trade association should be able to give advice on organisations which can do this) and determining whether workers will be exposed to airborne dust levels in excess of the MEL.

Exposure to airborne dust may be adequately controlled by:

- using a process or method of work that reduces the generation of dust to a minimum;

- providing dust control equipment to all dust producing processes to stop the dust entering the workroom atmosphere, eg local exhaust ventilation at woodworking machines;⁸ and
- making sure that plant and equipment is properly maintained.⁹ Keep ventilation ducts free from blockages and repair broken or damaged ducts. Maintain filter units and other plant equipment regularly in accordance with the manufacturer's recommendations and COSHH.

Where measures taken to reduce exposure to airborne dust are inadequate, then in addition suitable¹⁰ respiratory protective equipment must be provided and used. It should be selected from equipment that carries the European Community mark of conformity (the CE mark) and be appropriate to adequately control the exposure to the substance creating the risk.¹¹

Provide other personal protective equipment, such as eye protection, overalls and gloves, where necessary. Make sure it is suitable¹² and kept in good order. Launder overalls and aprons regularly.

Provide good washing facilities with hot and cold water, soap and towels and encourage a high standard of personal hygiene.

Provide vacuum cleaning equipment to remove dust from clothing, where this is a problem. Prevent the use of compressed airlines for this purpose.

Make sure workers are adequately informed, instructed, trained and supervised. This is essential if they are to understand the precautions and their duties and responsibilities.

Fire/explosion

Check that the design and installation of dust control equipment incorporates explosion precautions.^{5, 13} In particular look at the location of collection equipment and the need for enclosure and/or explosion relief.

Keep floors free and clear from wood chips and dust. Pay particular attention to areas around machines and on or near heating units.

Clean inside walls, ceilings, ledges and other surfaces of workrooms regularly to prevent dust accumulating. Use vacuum cleaning equipment with high efficiency filters. Do not use compressed airlines or hand brushing as these will create dust clouds and redistribute the dust.

Reading list and references

1 *Fire and explosion: How safe is your workplace? A short guide to the Dangerous Substances and Explosive Atmospheres Regulations* Leaflet INDG370 HSE Books 2002 (single copy free or priced packs of 5 ISBN 0 7176 2589 3)

2 *Control of substances hazardous to health. The Control of Substances Hazardous to Health Regulations 2002. Approved Code of Practice and guidance L5* (Fourth edition) HSE Books 2002 ISBN 0 7176 2534 6

3 *Preventing asthma at work - how to control respiratory sensitisers* L55 HSE Books 1994 ISBN 0 7176 0661 9

4 *COSHH and the woodworking industries* WIS6 (rev) HSE Books 1997

5 *Safe collection of woodwaste: Prevention of fire and explosion* WIS32 HSE Books 1997

6 *Assessment and control of wood dust: Use of the dust lamp* WIS12 HSE Books 1991

7 *General methods for the sampling and gravimetric analysis of respirable and inhalable dust* MDHS14/3 HSE Books 2000 ISBN 0 7176 1749 1

8 *LEV Woodworking Information Sheets* WIS23, WIS24, WIS25, WIS26 HSE Books 1992

9 *The maintenance, examination and testing of local exhaust ventilation* HSG54 HSE Books 1998 ISBN 0 7176 1485 9

10 *The selection, use and maintenance of respiratory protective equipment: A practical guide* HSG53 HSE Books 1998 ISBN 0 7176 1537 5

11 *Selection of respiratory protective equipment suitable for use with wood dust* WIS14 HSE Books 1991

12 *Personal protective equipment at work. Personal Protective Equipment at Work Regulations 1992 Guidance on Regulations* L25 HSE Books 1992 ISBN 0 7176 0415 2

13 *Safe handling of combustible dusts* HSG103 HSE Books 2003 ISBN 0 7176 2726 8

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This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

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