COSHH and the woodworking industries

HSE information sheet

Woodworking Information Sheet No 6

Introduction

This revised information sheet is one of a series prepared by the woodworking section of HSE's Manufacturing Sector. It provides advice to employers on the Control of Substances Hazardous to Health (COSHH) Regulations 2002 (as amended).[1]

There are many substances found in the woodworking industries that are hazardous to health. The main ways these substances get into the body is by breathing them in, by contact with them and by swallowing them if, for example, they get onto food. This sheet will tell you how to use these harmful substances so that the health risks are controlled and minimised.

What are the health risks?

The main health risks are occupational asthma and dermatitis. Some of the substances used can have very serious effects on the liver, kidneys and the central nervous system. Table 1 shows some of the main substances that can cause disease and shows you some of the controls you may need.

How can I protect my employees?

Assess all work activities that may expose employees to any hazardous substances (this is your 'COSHH assessment').[2] This means identifying the hazards and the risks to employees and deciding what you need to do to protect their health.

- Look at existing controls and see if they can be improved.
- Check that your engineering controls are working properly and that your maintenance and testing of these is up to date.
- Make sure you have safe systems of work and that your employees are using them.
- Review your assessment regularly to check that things have not changed.
- If you have more than five employees, make sure the assessment is written down.

What substances used in woodworking can cause disease?

Hazardous substances include:

- wood dust from hardwood, softwood and wood composites, such as chipboard and medium-density fibreboard (MDF);
- resins used in the manufacture of compressed products and particle-boards;
- coatings, such as paints, varnishes, stains and preservatives;
- adhesives, such as those used in lamination or furniture assembly;
- stripping agents;
- solvents.

What substances can be breathed in?

Wood dusts

These have a workplace exposure limit (WEL) of 5 mg/m³ (8-hour TWA). Exposure to wood dust must be reduced below this limit as far as is reasonably practicable. As long as your dust extraction system is effective, you are unlikely to exceed this limit.

Vapours and mists

These include solvents, paints, varnishes and preservatives. Many types of glues and resins, and some isocyanate-based paints and varnishes cause occupational asthma.

What substances can be swallowed?

Most substances can be swallowed if people are not careful about hygiene when eating, drinking or smoking. If you eat, drink or smoke at your workstation, or while wearing contaminated clothing, you are at particular risk.

Table 1 Common hazardous substances in the woodworking industry

Substance	*Health risk*	*Controls to consider*
WOOD DUST		
Hardwood, softwood, and wood composites	Can cause asthma May cause dermatitis Hardwood dust can cause a rare form of nasal cancer	Substitute wood that may cause asthma, eg Western Red Cedar. Use dust extraction. Use vacuum or dust-free systems for cleaning. Use respiratory protective equipment (RPE) with an assigned protection factor (APF) of 10 or more.
SOLVENTS		
Varnish, paint, thinners, adhesive, stripper, stain, wood preservative	Liver or kidney damage Central nervous system effects Dermatitis	Select safer material like water-borne products. Use extraction ventilation. You may need RPE. Use air-fed RPE (breathing apparatus) in restricted spaces. Use a high-efficiency spray gun. Provide protective clothing including protective gloves. Provide good general ventilation. Provide good washing facilities and skin creams.
REACTIVE SYSTEMS		
Isocyanate-based products, eg 2-pack (2K) paints, varnishes, adhesives Epoxy systems	Isocyanate – asthma and dermatitis Epoxy – dermatitis	Spray in an enclosed spray booth or room. Use air-fed RPE, protective clothing and gloves for spraying. Use protective gloves and clothing for brush and roller application. Provide good washing facilities and skin creams.
WOOD PRESERVATIVES		
Solvent- or water-borne products	Damage to central nervous system Dermatitis	Cut out and replace diseased timbers. Kill disease by drying out. Use breathing apparatus in confined spaces. Provide good washing facilities.

What about contact with the skin?

Many substances, like wood dusts and resins, solvents, paints, varnishes and strong detergents, will damage the skin. This may lead to skin soreness, blotches, cracking, itching and blisters. These are signs of irritant and allergic dermatitis.

Most solvents can be absorbed through the skin. Sometimes they can take dangerous substances such as wood preservatives with them. Provide gloves and overalls. Note that gloves always get contaminated inside, so if you do not provide single-use gloves, throw away protective gloves at the end of the shift. If you use latex gloves, provide 'low-protein powder-free' gloves.

Where can I get help to complete my COSHH assessment?

You can find help and guidance in *A step by step guide to COSHH assessment*[2] and the e-COSHH Essentials website (www.coshh-essentials.org.uk).

Product Safety Data Sheets also provide vital information.

Involve your employees in the assessment process. This helps you cover all the risks for the tasks they actually carry out, and increases the chance that they will use the control measures. Don't forget to assess the risks involved in maintenance and cleaning tasks.

If you decide to get a consultant's help, eg for air sampling, make sure they are competent (see COSHH essentials sheet G409).

Is air sampling necessary?

If you have good extraction ventilation you probably don't need air sampling. You can check it is working by looking at the amount of dust around machines or in the air. Ensure the ventilation system is examined and tested every 14 months.

Is dust extraction needed at woodworking machines?

Yes. At most woodworking machines the dust levels from both hardwood and softwood will be above the WEL so you need a good extraction system. On some machines, like sanders, you may also need to provide respiratory protective equipment (RPE).[3]

If you have a new extraction system installed, always obtain a full commissioning report with performance figures and air sampling. That way you know it works properly from the start.

How about portable machines like orbital sanders and circular saws?

Yes. They need extraction systems too. Several suppliers of portable machines have designed them to be used with integral dust extraction or connected to mobile vacuum extractor units. For fine dusts you will need RPE as well.

Alternatively, down-draught benches or booths fitted with dust extraction can be used, along with RPE.

Can't employees just wear a respirator?

No. If you cannot get adequate control by 'engineering controls' alone, eg dust or vapour extraction, then you should provide RPE as well. This is **in addition to** control at source, not in place of it.

RPE might be needed during short-term maintenance operations, like cleaning filtration plant and bag filters or entry into treatment vessels. RPE must fit, and the wearer must be able to tell that it is working properly. The initial selection of face pieces must include fit testing to ensure that the wearer has the correct device. More information on this is in the COSHH ACOP.[1]

If a respirator is necessary, which type should I choose?

Select equipment that carries the CE mark and can control exposure to the substance creating the risk. For example, for sanding, RPE must have an 'Assigned Protection Factor' (APF) of 10 or 20, whereas for reactive paint spraying or entry to treatment vessels, you need air-fed breathing apparatus with an APF of at least 20, preferably 40 or more. Ask your supplier for advice.

What about health surveillance?

You need health surveillance[4] in the following cases:

- Exposure to asthmagens like wood dust.
- Use of isocyanate-based products and anything labelled 'R42'.
- Cases of dermatitis: carry out a skin check for everyone exposed to wood dust or products labelled 'R43'.

Further information and online versions of all Woodworking Information Sheets can be found at www.hse.gov.uk/woodworking/index.htm.

References

1 *Control of substances hazardous to health (Fifth edition). The Control of Substances Hazardous to Health Regulations 2002 (as amended). Approved Code of Practice and guidance* L5 (Fifth edition) HSE Books 2005 ISBN 978 0 7176 2981 7

2 *A step by step guide to COSHH assessment* HSG97 (Second edition) HSE Books 2004 ISBN 978 0 7176 2785 1 (Currently being revised)

3 *Respiratory protective equipment at work: A practical guide* HSG53 (Third edition) HSE Books 2005 ISBN 978 0 7176 2904 6

4 *Health surveillance at work* HSG61 (Second edition) HSE Books 1999 ISBN 978 0 7176 1705 0

Further information

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