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# 4 Control of Substances Hazardous to Health

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The Control of Substances Hazardous to Health Regulations 2002 (as amended) apply to all employers and the self employed. The principles of COSHH are to prevent the exposure of workers to substances that are hazardous to health and therefore prevent ill health from occurring.

### 4.1 WEL's

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The COSHH Regulations are accompanied by a document called EH40 and this document contains Workplace Exposure Limits (WEL's) for the inhalation of hazardous substances. EH40 is updated annually, as scientific knowledge progresses WEL's for substances change.

A WEL is the maximum concentration of an airborne substance averaged over a reference period to which an employee may be exposed by inhalation. Both hardwood and softwood dust have a WEL.

### 4.2 Prevention is better than cure!

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Individual or group exposure to many substances used in the woodworking industry can result in a variety of health problems. Exposure can show immediate results such as dermatitis (skin rashes) breathlessness and burns. There are also long term effects, which not only prevent a worker from continuing in his occupation e.g. allergic asthma, allergic dermatitis but can cause death e.g. nasal, stomach and lung cancer.

An allergic reaction means that you have become sensitised to a substance and only need to be exposed to a minute amount of a substance to show a reaction. The word 'sen' after a substance in EH40 means that substance is a known sensitiser.

Imagine suffering from a severe asthma attack every time you encounter a speck of hardwood dust.

### 4.3 So what is a Hazardous Substance?

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A substance that has already been classified as being very toxic, toxic, harmful, corrosive or irritant, is allocated a WEL under the COSHH regulations which cover biological agents, dust and any other substance or compound which creates a hazard to health whilst at work. There are various types of materials used within the woodworking industry, which are hazardous by inhalation, ingestion (swallowing) and absorption (through the skin) e.g.

- Adhesives
- Hardwood Dust
- Herbicide
- Paint strippers
- Paints
- Pesticide
- Resins
- Softwood Dust
- Stains
- White Spirit

#### 4.3.1 WHAT MUST YOU DO ABOUT HAZARDOUS SUBSTANCES?

Employers and self-employed must carry out an assessment to identify the hazard, evaluate the risk to employees and any control measures that should be implemented. Remember you are assessing the activity being carried out using the substance and not just the substance alone!

You must also consider the effects if you are using more than one hazardous substance at once, or substances are mixed. They may be each hazardous in their own right but may also become more hazardous when combined!

## 4. Control of Substances Hazardous to Health

To carry out an assessment you need to follow these steps:

- Assess the risks.
- Prevent or adequately control exposure.
- Ensure the control measures are used and maintained.
- Monitor the exposure.
- Carry out appropriate health surveillance.
- Ensure employees are properly informed, trained and supervised.

Asking the following questions will assist in carrying out your initial assessment:

- What is the substance?
- What form does the hazardous substance take?
- What are the harmful components?
- How does the substance enter the body?
- What are the health effects of the substance?
- Is the substance listed in EH40 i.e. does it have a WEL?
- What process causes exposure to the substance?
- What is the level of exposure in your process?
- Who is exposed and when?
- What control measures (except PPE) do you have in place?
- What maintenance do you carry out on your equipment, ventilation, PPE etc?
- Do you carry out health surveillance? If so, what type?
- How is the exposure of employees monitored?
- Who is responsible for monitoring substances?
- What training is provided to employees regarding their exposure to substances?

Information to answer these questions should be available on the safety data sheet provided by the supplier of the substance, within EH40 and with knowledge of your own process. If a WEL is given to the substance you need to know if you are exceeding the set limits. You can find out the actual level of exposure within your process/ environment by requesting a competent person to carry out air sampling, personal monitoring of workers or use a dust lamp to find out the level of contaminant in the air.

From the answers to the questions you should be able to identify the risk to the health of your employees and whether they are exposed to a substance in excess of the set limits. If you suspect exposure to be above the limits, you must consider workplace monitoring to establish the operational exposure levels. Then you must act upon the findings if they are over the limits or if they are close enough that they may exceed limits at certain times. You must reduce the exposure to the substance by engineering methods or material replacement, with PPE being the last resort when all other reasonable routes have been explored.

### 4.3.2 HOW DO YOU REDUCE EXPOSURE?

COSHH requires you to reduce the exposure of a worker and not just by the use of PPE. PPE is a last resort and must only be used if exposure to a substance cannot be reduced by other control measures. If PPE is used it must protect the operative from the substance to which they are exposed; further information on PPE is provided in Section 12.

The hierarchy of control measures is listed below and you can use a combination of controls to reduce exposure:

### 4.3.3 ELIMINATION

Is the substance or the process that creates the hazard really necessary?

### 4.3.4 SUBSTITUTION

Can an alternative substance or process be used that is a safer option? Remember to ensure that the alternative substance does not create a different hazard that still needs to be controlled.

What about the cost of an alternative product? it may be slightly more expensive but if control measures are not required the extra cost is worth it. A workforce not exposed to a hazardous substance means a happier and healthier workforce and increased productivity.

### 4.3.5 ENCLOSED PROCESS

Can the process be enclosed to prevent workers being exposed to the substance? Can the process be partially enclosed with the use of ventilation?

### 4.3.6 LOCAL EXHAUST VENTILATION

The use of ventilation that removes the hazardous substance from an individual process.

### 4.3.7 REMOVAL OF OPERATIVES

Only operatives concerned with the works should be allowed in the area, could these operatives also be excluded by remote control etc?

### 4.3.8 REDUCE EXPOSURE TIME

Is it possible to reduce the amount of time a worker is exposed to the substance?

### 4.3.9 STORAGE

Ensure accidental exposure does not occur by having a safe method of storage.

### 4.3.10 PERSONAL PROTECTIVE EQUIPMENT (PPE)

The use of PPE and RPE will only protect the individual, and then only if it is worn correctly for all of the time. The regulations require you to use other methods to control exposure to a substance before resorting to the use of PPE. Any PPE identified must continue to work effectively in combination with any other items of PPE required.

## 4.4 Emergencies

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**In the event of an emergency, procedures must be in place for limiting the extent of risks to health and regaining adequate control as soon as possible.**

## 4.5 Maintenance of Control Measures

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**Once you have decided upon your control measures, you need to ensure that they protect the worker by reducing exposure to the substance and that you have a suitable and sufficient maintenance schedule for these control measures.**

Local exhaust ventilation (LEV) must be thoroughly examined and tested every 14 months; a competent person should also carry out weekly inspections. (e.g. spray booth filters) A suitable record must be kept of all thorough examinations and tests carried out on LEV. A suitable record form indicating the details that should be recorded is provided in Appendix 4.

Respiratory protective equipment should be examined and tested (where appropriate) each month and more frequently where the conditions are particularly severe.

However, in the case of half-mask respirators used only occasionally, for short spells against dusts or fumes of relatively low toxicity, longer intervals between examinations may be suitable. In such cases, the person responsible for the management of all aspects of RPE maintenance should determine suitable intervals, but in any event, the intervals should not exceed 3 months. Always ensure that the correct RPE is used for the appropriate task. If in doubt check with your equipment supplier.

It should also be noted that many items of PPE in general use are "Disposable". Checks should also be made to ensure employees are using these items correctly and not re-using shift after shift.

Records of such tests on RPE must be kept for at least 5 years. A suitable record form indicating the details that should be recorded is provided at Appendix 5.

To ensure that the control measures continue to be adequate, monitoring of the environment should be carried out.

## 4.6 Information and Training

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**Employees must be given information, instruction and training that includes the following:**

- The substance to which they are exposed and the risk to their health from this exposure.
- Factors which may influence or increase this risk e.g. smoking.
- The control measures to be adopted, the reason these control measures were selected and how they should be used.
- The use and maintenance of any PPE provided.
- Monitoring procedures.
- Details of any health surveillance.
- Any storage and cleaning information.
- Emergency procedures information.
- Defect reporting procedures.

**An example of a COSHH assessment record is in Appendix 6**

### 4.7 Health Surveillance

**Health surveillance is essentially the monitoring of employees state of health and is appropriate where:**

- Employees are exposed to substances hazardous to health linked to a particular disease or adverse health effect; and
- There is a reasonable likelihood under the conditions of the work of that disease or effect occurring; and
- It is possible to detect the disease or the effect.

The objective of any health surveillance is to protect the health of the employee by early detection of any adverse effects, and to monitor control measures that are in place. Any results of the health surveillance should lead to some action being taken that will benefit the health of employees.

Health surveillance will always include the keeping of individual health records. Occupational health records must be kept for a minimum period of 40 years. It may also include:

- Inspections by a responsible person.
- Basic enquiries and / or inspections about symptoms by a suitably qualified person e.g. a nurse.

Medical surveillance by a medical practitioner. The need to carry out surveillance and the extent it is carried out will depend upon the activity being carried out, the method and materials employed.

Examples are vibrating equipment potentially leading to hand-arm vibration syndrome and use of substances covered by the COSHH Regulations.

Where hazardous substances are being used, the extent to which surveillance is carried out will depend on the particular hazardous substance and the degree of exposure. (The COSHH Regulations stipulate where health surveillance must be carried out, none of these substances directly relate to a woodworking environment).

Sickness records may assist in identifying health issues within the workplace, a record of respiratory disease or disorders, complaints from employees about breathing problems or respiratory problems may all be indicators of a hazardous substance or inadequate control measures.

Advice and assistance should be sought from an occupational health specialist to establish if health surveillance is necessary and what type of surveillance should be carried out. The main aim should be to eliminate the hazardous substance and / or introduce control measures to reduce employee's exposure. However, health surveillance may still be necessary in any case to ensure that your control measures are adequate.

#### 4.7.1 SITUATIONS WHERE HEALTH SURVEILLANCE IS APPROPRIATE IN THE WOODWORKING INDUSTRY

Exposure to substances known to cause occupational asthma and respiratory sensitisers, e.g. red cedar dusts.

Health surveillance will involve the keeping of health records as well as enquiries seeking evidence of respiratory symptoms.

Exposure to substances known to cause severe dermatitis and skin sensitisation, e.g. organic solvent-based wood preservatives.

A responsible person should carry out skin inspections at regular intervals.

Exposures to substances, which are known or suspected carcinogens, e.g. hardwood dust, iso-cyanate finishing materials and inorganic arsenic compounds.

In the case of hardwood dust, it is doubtful whether nasal cancer could be detected at an early enough stage for treatment to be effective. Health surveillance would be restricted to the keeping of health records.

## 4.7 Health Surveillance (Cont.)

### 4.7.2 KEEPING RECORDS

Where any health surveillance is carried out individual records must be kept for 40 years.

Where individual health records only are required, they should contain the following information:

- Surname and forename
- Permanent address
- Sex
- Date of birth
- National Insurance Number
- Date of commencement of present employment.
- A historical record of jobs involving exposure to the hazardous substances requiring the health surveillance.

Where health surveillance is carried out which includes medical surveillance, the records must also contain the following information:

- Date of health surveillance.
- Name of person who carried out the surveillance.
- Conclusions of all other surveillance including decisions of the medical practitioner e.g. fitness for work (not including confidential clinical data).

### 4.7.3 ACTION

Health surveillance is only appropriate and worthwhile if you can act on the results. If employees are suffering from an adverse health effect, e.g. respiratory diseases or dermatitis, then you must prevent further exposure to the substance. This may be by a change of process or material, by relocating the employee or by the provision of respiratory protective equipment or personal protective equipment. RPE and PPE are only suitable where exposure to the substance is a small part of the work e.g. for short periods of time.

Advice on specific workplaces and /or problems may be sought from the Employment Medical Advisory Service (EMAS). EMAS are part of HSE and your nearest advisor can be contacted via your local HSE office.

## 4.8 Timber Treatment

The treatment of timber involves the use of wood preservatives. Both COSHH and the Control of Pesticides Regulations (as amended) are applicable to the timber treatment process. The use of wood preservatives is a specialist process and the Wood Protection Association produce a 'code of practice for safe design and operation of timber treatment installations' detailing the safe practices which should be followed.

The issues to be addressed in timber treatment plants include:

### People

- The training of all operatives involved in the timber treatment process.
- Adequate supervision.
- The carrying out and updating of COSHH assessment record.
- Access to appropriate welfare facilities.
- Appropriate PPE.

### Place

- Delivery of preservatives.
- Arrangements for preventing spillage, e.g. Bunding –should allow to capture a volume equivalent to 110% of the material being stored.
- Dripping Areas.
- Storage of treated timber (preferably under cover).
- Storage of preservatives in large and small quantities.

### Plant

- Design and construction of plant and equipment.
- Interlocking doors / safe operating procedures, etc.
- Appropriate pressure relief valves.
- Written scheme of maintenance and examination of pressure systems.
- Thorough examinations.
- Markings on equipment.

### Process

- Handling and disposal of waste preservatives.
- Maintenance procedures involving confined spaces etc.
- Emergency procedures.
- Fire prevention measures.
- Local environmental issues.

**British Woodworking Federation**

Royal London House, 22-25 Finsbury Square, London. EC2A 1DX.

Tel - 0844 209 2610 Fax - 0844 209 2611 [www.bwf.org.uk](http://www.bwf.org.uk)

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