

# WL8

## COSHH essentials for welding, hot work and allied processes



This information will help employers (including the self-employed) comply with the Control of Substances Hazardous to Health

Regulations 2002 (COSHH), as amended, to control exposure and protect workers' health.

It is also useful for trade union safety representatives.

Welding fume can cause lung disease, with an increased risk of asthma and cancer.

This sheet describes good practice using engineering control - moveable extraction.

It covers the points you need to follow to reduce exposure to an adequate level.

It is important to follow all the points, or use equally effective measures.

The advice does not apply to alloys containing cadmium or beryllium, or to work in confined spaces.

### Main points

- Dust and fume can cause serious lung diseases.
- Keep exposure as low as possible using all the controls in this sheet.
- Design, install, commission and maintain engineering controls. See sheet G406.
- Health monitoring is usually needed. See sheet G401.

# Oxy-gas welding and brazing

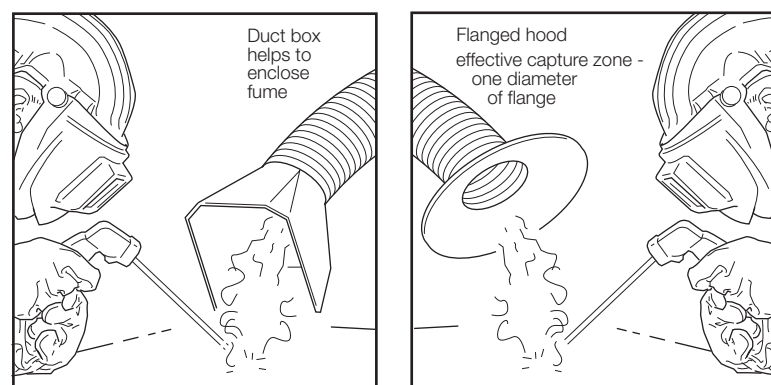
## Control approach 2 Engineering control

### Access and premises

- ✓ Only allow access to authorised staff.
- ✓ Locate the work away from doors, windows and walkways. Stop draughts interfering with the extraction.

### Equipment

- ✓ Provide a good standard of general ventilation; 5-10 air changes per hour, with a through draught.
- ✓ Provide a capture hood on a flexible arm, or a mobile unit. See illustrations.
- ✓ You need an air speed of at least 1 metre per second to clear fume, and between 5 and 10 metres per second into a moveable hood duct.
- ✓ Fit a manometer, pressure gauge or tell-tale to show that the extraction is working.
- ✓ Discharge cleaned, extracted air to a safe place outside the building, away from doors and windows.
- ✓ Mobile units can return cleaned air to the workroom.
- ✓ Have a supply of clean air coming into the workroom to replace extracted air.



Extracted welding hoods

### Procedures

- ✓ Remove grease and all surface coatings first, unless they are meant to be welded or cut through.
- ✓ Arrange work so that the worker's head is out of the fume.
- ✓ Confirm that extraction is turned on and working.
- ✓ Adjust a moveable welding hood so it collects hot fume rising. The hood should be within one duct diameter of the welding point.
- ✓ Use the correct nozzle and keep the flame as short as possible.

- ✓ Avoid nitrous fumes - remind workers to extinguish the torch during work pauses.
- ✓ Check for gas leaks.

**Caution: reducing flames can produce carbon monoxide.**

### **Maintenance, examination and testing**

- ✓ Follow the instructions in the manual - keep equipment in effective and efficient working order.
- ✓ If any equipment is faulty, repair it straight away.
- ✓ Daily, look for signs of damage to ducting, fans and air filters. Noisy or vibrating fans can indicate a problem.
- ✓ At least once a week, check that the extraction system and gauges work properly.
- ✓ You need to know the manufacturer's specifications to check the extraction's performance.
- ✓ If this information isn't available, hire a competent ventilation engineer to determine the performance needed for effective control.
- ✓ The engineer's report must show the target extraction rates.
- ✓ Keep this information in your testing log-book.
- ✓ Get a competent ventilation engineer to examine the extraction thoroughly and test its performance at least once every 14 months, or six months for non-ferrous metals. See the HSE publication HSG54 - see 'Further information'.
- ✓ Keep records of all examinations and tests for at least five years.
- ✓ Review records - failure patterns show where preventive maintenance is needed.

### **Personal protective equipment (PPE)**

- ✓ Ask your safety equipment supplier to help you get the right PPE.
- ✓ Provide storage for clean and contaminated PPE.

### *Respiratory protective equipment (RPE)*

- ✓ RPE should not be needed.

### *Other protective equipment*

- ✓ Provide and ensure that workers use a welding helmet, flame-resistant overalls and protective gloves.
- ✓ Use a properly equipped contract laundry or a suitable equivalent to wash work clothing.
- ✓ Skin creams help in washing contamination from the skin. After-work creams help to replace skin oils.

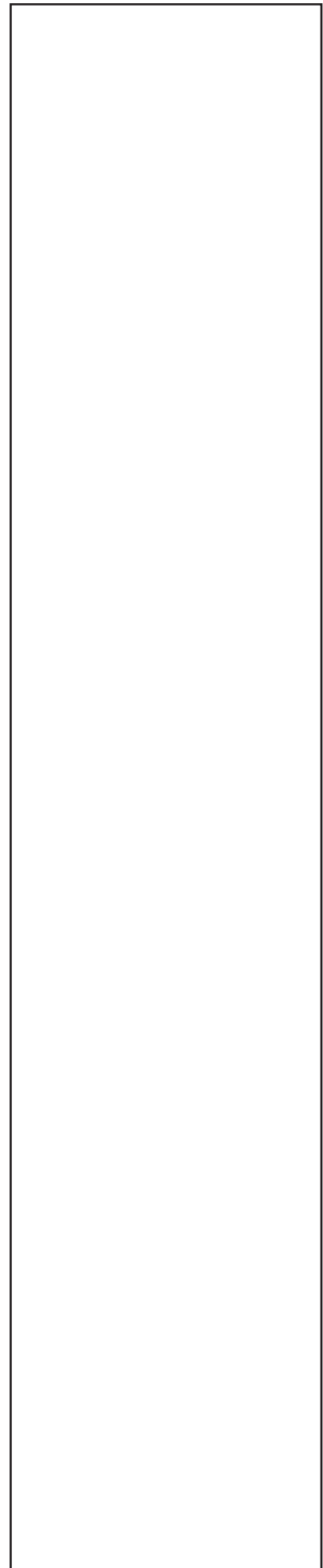
**Caution: Never allow use of compressed air for removing dust from clothing.**

### **Health monitoring**

- ✓ You should consider health monitoring. See sheet G401.
- ✓ Consult an occupational health professional - see 'Useful links'.

### **Cleaning and housekeeping**

- ✓ Keep the work area clean and free of combustible materials.
- ✓ Clean the general workroom once a week.



### Training and supervision

- ✓ Tell workers that fume from welding and cutting can cause serious lung diseases.
- ✓ Working in the right way and using the controls correctly is important for exposure control. Train and supervise workers. See sheet WLO.

### Further information

- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *The safe use of compressed gases in welding, flame cutting and allied processes* HSG139 HSE Books 1997 ISBN 0 7176 0680 5
- *Cadmium in silver soldering or brazing* Engineering Information Sheet EIS31 HSE 1999 Web only version available at [www.hse.gov.uk/pubns/eis31.pdf](http://www.hse.gov.uk/pubns/eis31.pdf)
- *Hot work on small tanks and drums* Leaflet INDG314 HSE Books 2000 (single copy free or priced packs of 10 ISBN 0 7176 1766 1)
- For environmental guidelines see sheet WLO

### Useful links

- Your trade association may advise on health and safety consultants and training providers.
- For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit [www.hse.gov.uk/](http://www.hse.gov.uk/). You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.
- Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at [www.bohs.org](http://www.bohs.org) for lists of qualified hygienists who can help you.
- Look in the Yellow Pages under 'Health and safety consultants' and 'Health authorities and services' for 'occupational health'.
- Also see [www.nhsplus.nhs.uk](http://www.nhsplus.nhs.uk).

This document is available at: [www.hse.gov.uk/pubns/guidance/](http://www.hse.gov.uk/pubns/guidance/) and [www.hse.gov.uk/coshh/essentials/](http://www.hse.gov.uk/coshh/essentials/)

**This document 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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### Employee checklist

- Do you know how to use the controls properly?
- Is the extraction in the right position and working?
- Use, maintain and store your protective equipment in accordance with instructions.
- Look for signs of leaks, wear and damage.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Put out the torch during work pauses.
- Co-operate with health monitoring.
- Wash your hands before eating, drinking, or using the lavatory.
- Never clean your hands with solvents or concentrated cleaning products.
- Use skin creams provided as instructed.