

# WL17

## 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.

Fumes from soldering with rosin-cored solder may cause asthma.

Prevent exposure to substances that may cause asthma. If that is not reasonably practicable, control short- and long-term exposures to prevent asthma developing.

If an individual develops occupational asthma, very low levels in air can trigger an attack. Control exposure to prevent this.

This sheet describes good practice using engineering control - fixed 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.

### Main points

- Fume can cause asthma.
- Keep exposure as low as possible using all the controls in this sheet.
- Design, install, commission and maintain engineering controls. See sheet G406.
- Health surveillance is usually needed. See sheet G402.
- See manufacturers' safety data sheets - select safer consumables.

# Soldering: Hand-held with lead-based, rosin-cored solders

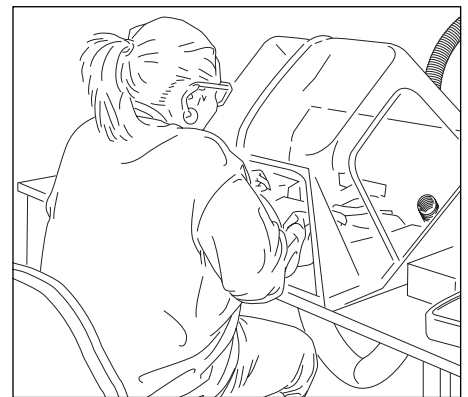
## Control approach 2 Engineering control

### 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

- ✓ Can you use mechanical jointing, rosin-free or rosin-reduced solder?
- ✓ Avoid soldering fume. Wherever possible, use an extracted booth or cabinet. See illustration.
- ✓ You need an inward air speed between 0.5 and 1 metre per second into the booth.
- ✓ If you use a capture hood, always keep it close to the soldering point. Show it is effective by air sampling. See sheet G409.
- ✓ If you use tip extraction, provide extraction tubes with a diameter greater than 5 mm. Show it is effective by air sampling. See sheet G409.
- ✓ See the manufacturer's specification for tip extraction speeds.
- ✓ 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.
- ✓ Have a supply of clean air coming into the workroom to replace extracted air.



**Caution: Don't use bench-mounted filtration units that return air to the workroom unless fitted with HEPA filters.**

### Procedures

- ✓ Confirm that extraction is turned on and working.
- ✓ Use soldering irons at the lowest temperature possible for an acceptable joint.

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### **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.
- ✓ When using tip extraction, keep the extraction tubes free of condensed fume. Clear the tubes at least once an hour, and wash them out thoroughly at the end of each shift.
- ✓ Daily, look for signs of damage.
- ✓ 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.

#### *Respiratory protective equipment (RPE)*

- ✓ RPE should not be needed.

#### *Other protective equipment*

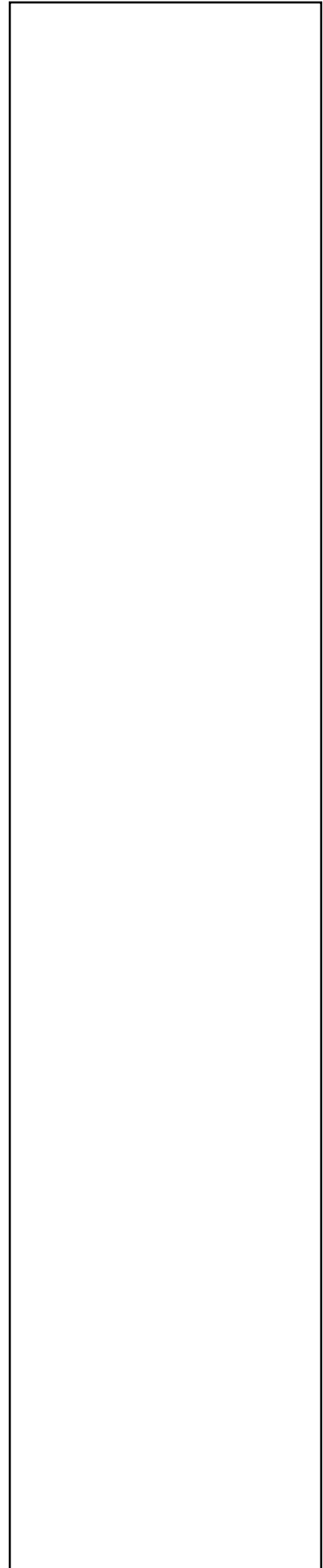
- ✓ Provide and ensure that workers use protective gloves. Single-use nitrile gloves are acceptable. If you must use latex gloves, use only 'low-protein, dust-free' gloves.
- ✓ Throw away single-use gloves every time they are taken off.
- ✓ Use a properly equipped contract laundry or a suitable equivalent to wash work clothing.
- ✓ Skin creams help in washing contamination from the skin. After-work creams help to replace skin oils.

### **Health surveillance**

- ✓ You need to do health surveillance. See sheet G402.
- ✓ Consult an occupational health professional - see 'Useful links'.
- ✓ Keep health records and the results of tests for 40 years.

### **Cleaning and housekeeping**

- ✓ Clean the general workroom once a week.
- ✓ Dispose of hazardous wastes safely.



### Training and supervision

- ✓ Tell workers that fume from rosin-cored solder may cause asthma.
- ✓ 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
- *Solder fume and you* Leaflet INDG248(rev) HSE Books 2001 (single copy free)
- *Controlling health risks from rosin (colophony) based solder fluxes* Leaflet INDG249 HSE Books 1997 (single copy free or priced packs of 10 ISBN 0 7176 1383 6)
- For environmental guidelines see sheet WLO

### Useful links

- Your trade association may advise on health and safety consultants and training providers.
- HSE priced and free publications are available from HSE Books  
Tel: 01787 881165 Website: [www.hsebooks.co.uk](http://www.hsebooks.co.uk).
- HSE free leaflets can be downloaded from HSE's website:  
[www.hse.gov.uk/pubns](http://www.hse.gov.uk/pubns).
- For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Textphone: 0845 408 9577 e-mail: [hse.infoline@natbrit.com](mailto:hse.infoline@natbrit.com).
- 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).

### Employee checklist

- Do you know how to use the controls properly?
- Is the extraction working?
- Use, maintain and store your protective equipment in accordance with instructions.
- Throw away single-use gloves every time you take them off.
- Look for signs of leaks, wear and damage.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Co-operate with health surveillance.
- 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.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.