

WL19

COSHH essentials for welding, hot work and allied processes

The Control of Substances Hazardous to Health Regulations 2002 (COSHH) require employers to ensure that exposure is prevented or, where this is not reasonably practicable, adequately controlled. This guidance gives practical advice on how this can be achieved by applying the principles of good practice for the control of exposure to substances hazardous to health, as required by COSHH.

It is aimed at people whose responsibilities include the management of substances hazardous to health at work (eg occupational health specialists, anyone undertaking COSHH assessments and supervisors). It is also useful for trade union and employee safety representatives. It will help you carry out COSHH assessments, review existing assessments, deliver training and supervise activities involving substances hazardous to health.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, 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.

See Essential information near the end of the sheet.

Surface preparation: pressure blasting (medium-sized items)

Control approach Engineering control + Respiratory protective equipment (RPE)

What this sheet covers

This sheet describes good control practice when using a blasting booth for the surface preparation of medium-sized items.

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

Follow all the points, or use equally effective measures.

Hazards

- ✓ Fume and dust from allied processes, eg. flame and arc cutting, blasting and post-weld dressing, can cause lung disease. Abrasive blasting produces a great deal of dust that includes metals and metal oxides.

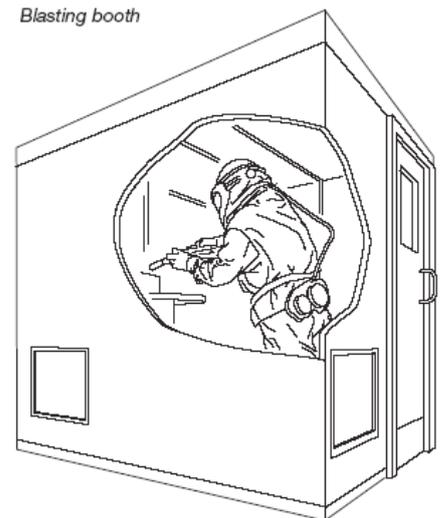
Access to work area

- ✓ Use a permit-to-work for access.
- ✓ Designate the booth an exclusion zone and post warning signs.

Equipment and procedures

- ✓ Use a fully enclosed, extracted booth. See the illustration.
- ✓ Provide blasting equipment with a fast-actuating cut-off.
- ✓ Consider using wet blasting or high-pressure water jetting in place of dry abrasive blasting, or an automated system.
- ✓ Fit a pressure gauge or tell-tale to show that the extraction is working.
- ✓ Discharge extracted air to a safe place away from doors, windows and air inlets.
- ✓ Have a supply of clean air coming into the workroom to replace extracted air.
- ✓ Confirm that extraction is turned on and working.
- ✓ Do not use sand abrasives.

Blasting booth



Respiratory protective equipment (RPE)

- ✓ Use a blasting helmet with airline breathing apparatus (BA).
- ✓ Tell workers to check RPE is working properly before every use.
- ✓ Make suitable arrangements for maintenance, storage and replacement of RPE.

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- ✓ Maintain RPE in effective and efficient working order.
 - ✓ Visually check compressed airlines for signs of damage before use.
 - ✓ Examine and test non-disposable RPE thoroughly at least once every month and record this.
 - ✓ Keep records of all examinations and tests for at least five years.
 - ✓ Wearers must be medically fit to wear BA.
 - ✓ Air supplied to BA should meet minimum quality requirements, in line with the latest British Standard.
 - ✓ Make suitable arrangements for maintenance, storage and replacement of RPE.

Personal protective equipment (PPE)

- ✓ Use a contract laundry or a suitable equivalent to wash work clothing. Don't allow workers to do this at home.
- ✓ Make suitable arrangements for maintenance, storage and replacement of PPE.
- ✓ Ask your supplier to advise on suitable PPE.
- ✓ Ensure compatibility with RPE and other PPE required.
- ✓ Workers also need blast suits, protective gloves and footwear.
- ✓ Provide coveralls that do not retain dust.

Personal decontamination

- ✓ Provide warm water, mild skin cleansers, and soft paper or fabric towels for drying. Avoid abrasive cleansers.
- ✓ Provide pre-work skin creams, which will make it easier to wash dirt from the skin.
- ✓ Provide after-work creams to replenish skin oils.

Caution: 'Barrier creams' are not 'liquid gloves' and do not provide a full barrier.

Maintenance, examination and testing

- ✓ Keep all equipment used for the task in effective working order. Maintain it as advised by the supplier or installer.
- ✓ Check for signs of damage to control equipment before starting work.
- ✓ Have equipment thoroughly examined and tested against its performance standard, at suitable intervals.
- ✓ For local exhaust ventilation (LEV), a user manual or log book is helpful in setting out the frequency of checking, maintenance or parts replacement.
- ✓ For LEV with no user manual or log book, you may need the help of a competent person. They can determine the performance needed for adequate control.
- ✓ LEV systems require a statutory 'thorough examination and test' (TExT).
- ✓ Get a competent person to perform the TExT at least once every 14 months.
- ✓ Carry out all actions arising from the TExT.

- ✓ Keep an employer record for at least 5 years of TExT information such as target extraction rates which show the LEV is performing as originally intended.
- ✓ Several measures are available to check effectiveness of controls. These range from simple qualitative (eg. use of a dust lamp) to complex quantitative techniques (eg air sampling) usually for higher-risk scenarios.
- ✓ HSG258 provides more detailed information on LEV systems and legal and competence requirements.

Cleaning and housekeeping

- ✓ Keep the work area clean and free of combustible materials.

Caution: Never allow the use of brushes or compressed air for removing dust from skin and clothing. Avoid the use of brushes or compressed air for removing dust from surfaces or from inside machinery.

Exposure monitoring

- ✓ You may need to assess lead exposure when blasting surfaces coated with old paint that contains lead. See sheet WL0 for further information.

Health surveillance

- ✓ Provide health surveillance for asthma where there is a reasonable likelihood that asthma may occur in your workplace. See sheet G402.

Training and supervision

- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Tell workers about the hazards associated with their work and how to recognise early signs of dermatitis.
- ✓ Provide them with training on handling chemicals safely, when and how to use controls, and how to check they are working. Also cover:
 - how the LEV system works;
 - how to use LEV to get the best out of it;
 - how to check the LEV is working;
 - what to do if something goes wrong.
- ✓ Involve managers and supervisors in health and safety training.
- ✓ Training records are helpful to demonstrate training has taken place.

Essential information

WL0 – *Advice for managers*

G402 – *Health surveillance for occupational asthma*

G409 – *Exposure measurement: Air sampling*

Further information

For further health and safety information for welding and allied processes, visit the HSE welding website: www.hse.gov.uk/welding/

For further information on local exhaust ventilation (LEV): HSG258 *Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV)* www.hse.gov.uk/pubns/books/hsg258.htm

For further information on respiratory protective equipment: HSG53
Respiratory protective equipment at work - A practical guide
www.hse.gov.uk/pubns/books/hsg53.htm

G series: General Guidance COSHH Essentials sheets:
www.hse.gov.uk/pubns/guidance/gseries.htm

You can find the full COSHH essentials series at:
www.hse.gov.uk/coshh/index.htm

Occupational Safety and Health Consultants Register: www.oshcr.org/
The Control of Lead at Work Regulations 2002. (Third edition). ACOPI and guidance www.hse.gov.uk/pubns/books/l132.htm

For information about health and safety, visit <https://books.hse.gov.uk>
or <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.

To report inconsistencies or inaccuracies in this guidance,
email: commissioning@wlt.com

Employee checklist

- Are you sure about safe work procedures?
- Do you know how to use the equipment properly?
- Do you know how to use the blasting booth extraction system correctly?
- Look for signs of wear and damage.
- Use, maintain and store your RPE and PPE in accordance with instructions.
- 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, smoking, using the lavatory and after work.
- Never clean your hands with solvents or concentrated cleaning products.
- Use skin creams provided as instructed.