

SR21

COSHH Essentials for
service and retail

Dust from abrasive wheels

Control approach 2 Engineering control

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.

What this sheet covers

This sheet describes good control practice when using abrasive wheels for grinding, fettling, dressing and cutting.

It covers the key points you need to follow to reduce exposure to abrasive particles and dusts generated by the work activity to an adequate level. This is achieved by following good control practice, ie follow all the points described in this sheet or use equally effective measures.

Hazards

- ✓ Particles and dusts created by abrasive wheels may cause respiratory irritation and lung disease.
- ✓ They can also cause harm to the skin and eyes.

Access to work area

- ✓ Only allow access to authorised and appropriately trained people.
- ✓ Keep the workplace well organised, with clear exit routes.

Equipment and procedures

- ✓ Provide suitable local exhaust ventilation (LEV), eg a receiving hood (see Figure 1).
- ✓ Provide a good standard of general ventilation. This can be natural ventilation from doors, windows etc. or controlled, where air is supplied or removed by a powered fan.
- ✓ Airflow must be sufficient to control airborne contaminants effectively. This will depend on the design, the size of opening, and the type of process and substance being controlled.
- ✓ If you use a capture hood, always keep it close to the source of dust emission.
- ✓ Provide an easy way of checking that the LEV is working, eg airflow indicator or equivalent.
- ✓ Discharge extracted air to a safe place outside the building, away from doors, windows, air inlets and other premises. Have a supply of clean air coming into the workroom to replace the extracted air.



Figure 1 – Receiving hood

Respiratory protective equipment (RPE)

- ✓ RPE is not normally needed.
- ✓ RPE may be needed for general workshop maintenance and cleaning. If so, provide RPE with a UK Standard Assigned Protection Factor (APF) of at least 20 (eg filtering half-mask or powered TH2). See sheet R3 in Essential information.

-
- ✓ Fit testing is required for RPE with a tight-fitting face seal (see INDG479 in Further information).
 - ✓ Workers wearing tight-fitting RPE must be clean shaven.
 - ✓ Ensure RPE is compatible with other PPE worn.
 - ✓ Workers should be trained on how to check RPE is working properly before every use and record this, how to fit it properly, and how to look after it.
 - ✓ Keep RPE clean and store it in a clean place.
 - ✓ Ensure workers discard disposable RPE at the end of the shift, or sooner if their RPE becomes blocked with dust.
 - ✓ Change the filters on respirators in accordance with manufacturer's recommendations and if:
 - the shelf-life expiry date has passed;
 - they are damaged or visibly contaminated;
 - they become harder to breathe through.
 - ✓ For reusable RPE, a thorough maintenance, examination and test should be carried out at least once a month and recorded. However, if the RPE is used only occasionally, an examination and test should be carried out before use and, in any event, the interval should not exceed three months.
 - ✓ Powered respirators with hoods/helmets may be more suitable to wear in hot environments.
 - ✓ It is recommended that continuous wear time for tight-fitting (unpowered) RPE is less than one hour; otherwise, the RPE can become uncomfortable to wear, leading to loosening or removal of the mask in the work area. This will put workers at risk.
 - ✓ If the RPE needs to be worn continuously for more than one hour, you may wish to consider providing powered respirators.
 - ✓ Make suitable arrangements for the correct maintenance, storage and replacement of RPE.

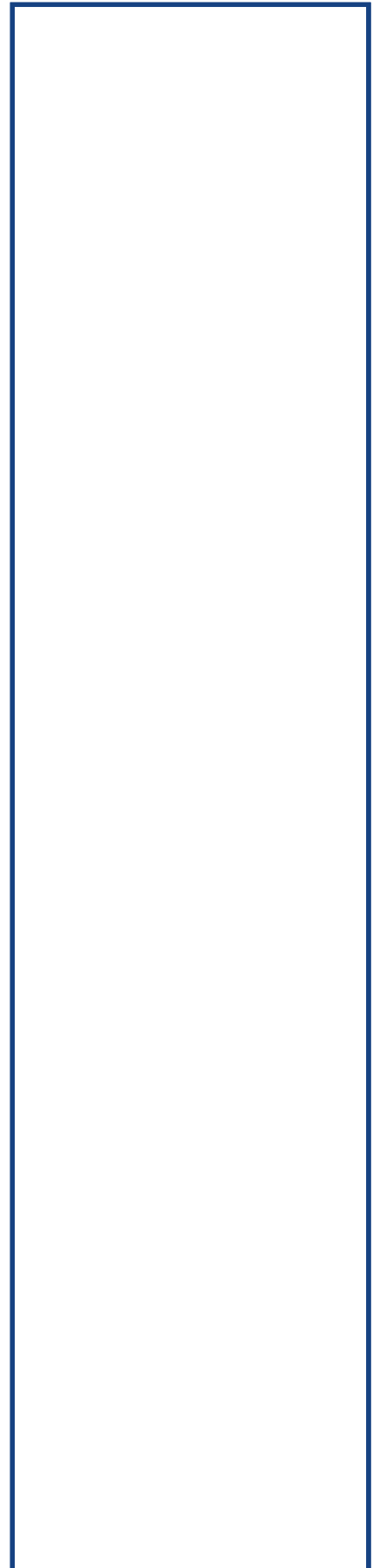
Personal protective equipment (PPE)

- ✓ Ask your supplier to advise on suitable PPE.
- ✓ Provide eye protection.
- ✓ Provide close-fitting overalls to avoid clothing being caught up in the wheel.
- ✓ Consult workers to ensure that the PPE will be suitable for them.
- ✓ Ensure that all items of PPE are compatible.
- ✓ Make suitable arrangements for the correct maintenance, storage and replacement of PPE.

Personal decontamination and skin care

- ✓ Provide warm water, mild skin cleansers, and soft paper or fabric towels for drying. Avoid abrasive cleansers.
- ✓ Provide pre-work skin creams, which make it easier to wash contaminants from the skin.
- ✓ Moisturisers should then be used after hand washing.
- ✓ Provide after-work creams to replenish skin oils.

Caution: These creams are not a substitute for 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 manufacturer, 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 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 five years of TExT information such as target extraction rates, which show that the LEV is performing as originally intended.
- ✓ Several measures are available to check the effectiveness of controls. These range from simple qualitative (eg use of a dust lamp) to complex quantitative techniques (eg air sampling); the latter are usually for higher-risk scenarios. See sheet G409 in Essential information.
- ✓ HSG258 provides more detailed information on LEV systems and legal and competence requirements. See Further information.

Cleaning and housekeeping

- ✓ Clean work equipment and the work area daily. Clean other equipment and the workroom regularly – at least once a week.
- ✓ Use vacuum equipment that meets at least the dust Class M (medium hazard) classification to remove dust.

Health surveillance

- ✓ Provide health surveillance for asthma where there is a reasonable likelihood that this may occur in your workplace. See sheet G402 in Essential information.
- ✓ Consult an occupational health professional on the level of health surveillance required.

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 asthma.
- ✓ Provide workers with training on:
 - working safely with hazardous substances;
 - when and how to use controls;
 - how to check they are working;
 - how the LEV system works;
 - how to check that the LEV is working;
 - how to use the LEV to get the best out of it;
 - what to do if something goes wrong.
- ✓ Involve managers and supervisors in health and safety training.
- ✓ Training records are helpful to demonstrate that training has taken place.

Essential information

S102 – Selecting personal protective equipment

G402 – Health surveillance for occupational asthma

G409 – Exposure measurement: Air sampling

R3 – UK Standard Assigned Protection Factor 20 (APF 20)

Further information

Safety in the use of abrasive wheels HSG17 (third edition), HSE Books, ISBN 978 0 7176 1739 5. www.hse.gov.uk/pubns/books/hsg17.htm

Clearing the air: A simple guide to buying and using local exhaust ventilation (LEV) INDG408(rev1), HSE Books 2016. www.hse.gov.uk/pubns/indg408.pdf

Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV) HSG258 (second edition), HSE Books 2017, ISBN 978 0 7176 6613 3. www.hse.gov.uk/pubns/books/hsg258.htm

Control of substances hazardous to health: The Control of Substances Hazardous to Health Regulations 2002. Approved Code of Practice and guidance L5 (sixth edition) HSE 2013. <https://www.hse.gov.uk/pubns/books/l5.htm>

Respiratory protective equipment at work: A practical guide HSG53 (fourth edition), HSE Books 2013, ISBN 978 0 7176 6454 2. www.hse.gov.uk/pubns/books/hsg53.htm

INDG479 – Guidance on respiratory protective equipment (RPE) fit testing

Occupational Safety and Health Consultants Register www.oshcr.org/

You can find the full COSHH Essentials series at www.hse.gov.uk/coshh/index.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@tso.co.uk

Employee checklist

- Do you understand the health hazards associated with your work?
- Are you sure about safe working procedures?
- Do you know how to use the controls?
- Check that the LEV is working prior to every use.
- Look for signs of leaks, wear and damage to equipment.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Use, maintain and store your PPE in accordance with instructions.
- Is the extraction working? Is there any obvious dust on work surfaces and ledges?
- Wash hands before eating and drinking, after smoking and using the lavatory, and after work.
- Never clean your hands with concentrated cleaning products or solvents.
- Use skin creams provided as instructed.
- Co-operate with health surveillance.