

RB4

COSHH essentials for rubber manufacturers

Rubber milling

Control approach 2 Engineering control



This information will help employers comply with the Control of Substances Hazardous to Health Regulations 2002 (COSHH), as amended, to control exposure to rubber dust and fume, and protect workers health.

It is also useful for trade union and employee safety representatives.

This sheet describes good practice using dust and fume 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

- Milling can produce high levels of fume and dust.
- Keep exposures as low as possible using all the controls in this sheet.
- Make sure the controls work.
- Health surveillance for dermatitis is needed - see sheet G403.

Hazard

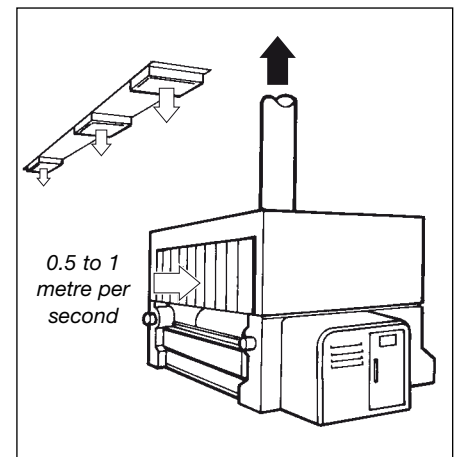
- ✓ Rubber process dust arises in rubber making where ingredients are handled, weighed, added to or mixed with uncured natural rubber or synthetic elastomers.
- ✓ Rubber fume is given off in making natural or synthetic rubber, when blending ingredients.
- ✓ Rubber process dust and fume can cause cancer and dermatitis.
- ✓ Keep inhalation as low as possible below the workplace exposure limits of 6 mg/m^3 (8-hour time-weighted average) for rubber process dust and 0.6 mg/m^3 (8-hour time-weighted average) for rubber fume, measured as cyclohexane-soluble material.
- ✓ Rubber process dust does not include dust from cured rubber, eg from buffing or trimming.

Access and premises

- ✓ Only allow access to authorised staff.
- ✓ For cleaning, lock off the machinery and display warning signs.

Equipment

- ✓ Enclose the mill as much as possible, eg. strip curtains to retain dust and fume.
- ✓ You need an air speed between 0.5 and 1 metre per second into the enclosure.
- ✓ Fit a manometer or pressure gauge near the extraction point, to show that the system is working properly.
- ✓ Also extract fume given off from freshly milled rubber, eg on conveyors.
- ✓ You may need to fit an alarm to warn of blockages.
- ✓ Discharge cleaned, extracted air to a safe place outside the building, away from doors, windows and air inlets.
- ✓ Have a supply of clean air coming into the workroom to replace extracted air as filter failure would cause gross contamination of any air returned to the workroom.
- ✓ Consult a qualified ventilation engineer to design new control systems and to update current controls. See sheet G406.



Personal protective equipment (PPE)

- ✓ Ask your supplier to help you get the right PPE.

Respiratory protective equipment (RPE)

- ✓ RPE should not be needed if the controls work properly.
- ✓ RPE is usually needed for maintenance and cleaning.
- ✓ Provide RPE with an assigned protection factor (APF) of at least 10. See sheet R2.
- ✓ Disposable RPE is acceptable - throw it away at the end of the task. Otherwise, replace RPE filters as recommended by the supplier.
- ✓ Make sure all RPE is properly fit-tested - get advice from your supplier.
- ✓ Keep RPE clean. Store it away from dust and other contaminants.

Other PPE

- ✓ Provide chemical and heat resistant protective gloves - seek advice from your supplier.
- ✓ Protective gloves are usually contaminated inside after several uses. Throw these away at the end of the shift unless you are sure that they are not contaminated.
- ✓ Provide coveralls that do not retain dust.
- ✓ Use a contract laundry or a suitable equivalent to wash work clothing.
- ✓ Skin creams are important for skin condition and help in washing contamination from the skin. After work creams help to replace skin oils.

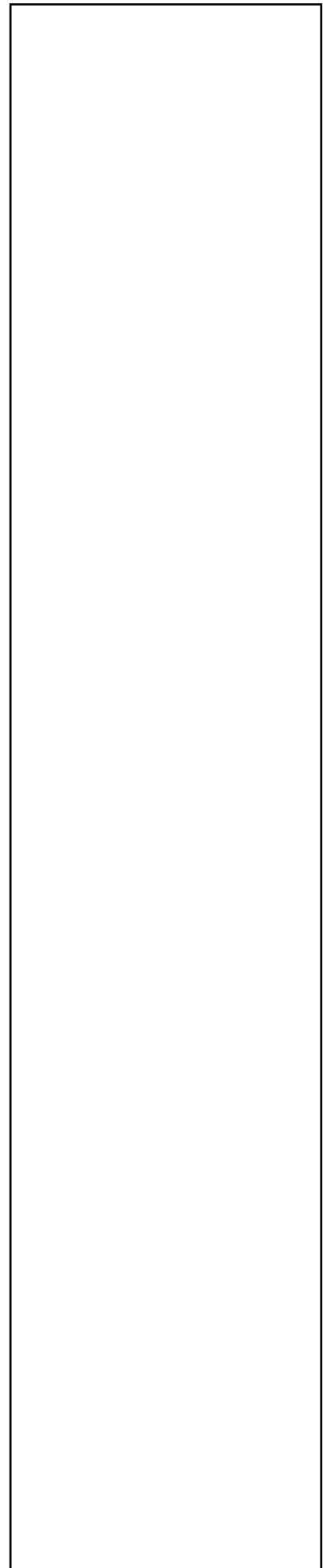
Caution: 'Barrier creams' do not create a full barrier.

Procedures

- ✓ Always confirm that the extraction is turned on and working at the start of work.

Maintenance, examination and testing

- ✓ Follow instructions in maintenance manuals - keep equipment in effective and efficient working order.
- ✓ Use a written system of work for maintenance and define the PPE necessary.
- ✓ Daily, look for signs of damage.
- ✓ Repair faulty extraction systems as soon as possible. Meanwhile, wear RPE.
- ✓ At least once a week, check that the dust 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 logbook.
- ✓ Get a competent ventilation engineer to examine the system thoroughly and test its performance at least once every 14 months. See the HSE publication HSG54).
- ✓ Examine and test non-disposable RPE thoroughly at least once every three months.
- ✓ Keep records of all examinations and tests for at least five years.



Health surveillance

- ✓ Use health surveillance for dermatitis. See sheet G403.
- ✓ Consult an occupational health professional - see 'Useful links'.

Cleaning and housekeeping

- ✓ Clean general workrooms once a week to stop dust being stirred up.
- ✓ Use a Class H vacuum cleaner fitted with a HEPA filter to clear up dust.

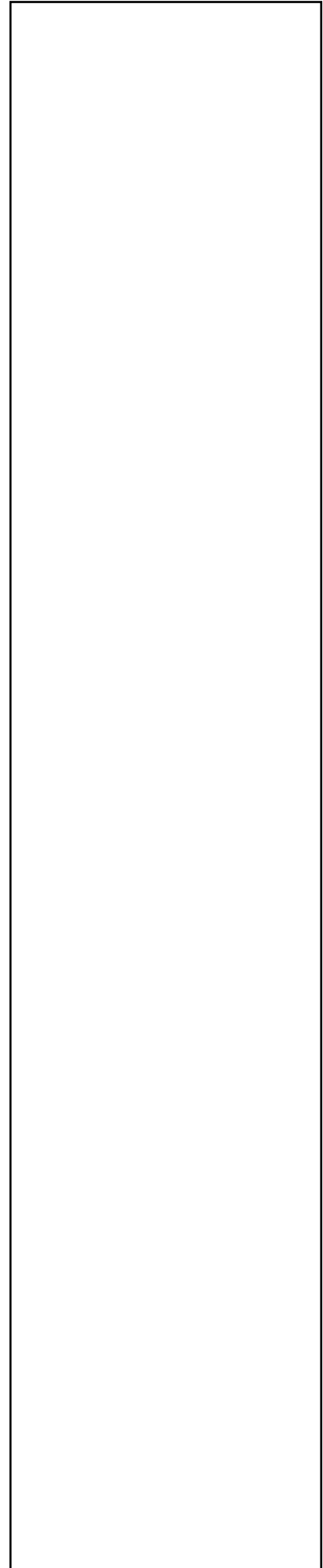
Caution: Don't use a brush or compressed air for cleaning surfaces and clothing.

Training and supervision

- ✓ Tell workers that rubber process dusts and rubber fume can cause cancer. Warn them about dermatitis.
- ✓ Working in the right way and using the controls correctly is important for exposure control. Train and supervise workers. See sheet RB0.
- ✓ Ask your trade association for advice on training providers - see 'Useful links'.

Further information

- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *A new practical guide to complying with COSHH in the rubber industry* Guidance HSE Books 1997 ISBN 0 7176 1372 0
- *Dust and fume control at rubber mixing and milling* Guidance HSE Books 1996 ISBN 0 7176 0992 8
- *Respiratory protective equipment at work: A practical guide* HSG53 (Third edition) HSE Books 2005 ISBN 0 7176 2904 X
- *Safe to breathe: Dust and fume control in the rubber industry* Leaflet IACL95 HSE 1995 Web only version available at www.hse.gov.uk/pubns/rubindex.htm
- *Preventing dermatitis at work: Advice for employers and employees* Leaflet INDG233 HSE Books 1996 (single copy free or priced packs of 15 ISBN 0 7176 1246 5)
- For environmental guidelines, see sheet RB0



Useful links

- The British Rubber Manufacturers Association (BRMA)
6 Bath Place, Rivington Street, London EC2A 3JE
Tel: 0207 457 5040 Website: www.brma.co.uk
e-mail: mail@brma.co.uk.
- The British Tyre Manufacturers Association (BTMA)
www.btmuk.com e-mail: mail@btmuk.com Postal address as BRMA (above).
- The British Rubber and Polyurethane Products Association (BRPPA)
www.brppa.co.uk e-mail: mail@brppa.co.uk Postal address as BRMA (above).
- The Retread Manufacturers Association (RMA)
PO Box 320, Crewe, Cheshire CW2 6WY
Website: www.retreaders.org.uk e-mail: rma@greentyres.com.
- HSE priced and free publications are available from HSE Books
Tel: 01787 881165 Website: www.hsebooks.co.uk.
- See www.coshh-essentials.org.uk for other chemicals.
- For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com.
- Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at 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.

Employee checklist

- Is the extraction switched on and working properly?
Check the gauge.
- Check that any RPE works properly every time you use it.
- Co-operate with lock-off procedures for mill cleaning.
- 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.
- Use, maintain and store your PPE in accordance with instructions.
- Throw away protective gloves at the end of the shift.
- Wash your hands before and after eating, drinking, smoking and using the lavatory.
- Never use solvents to clean your skin.
- 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.