



Control approach 2

Dust from mixing

RB03

Engineering control



This guidance sheet is for employers to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH) by controlling exposure to chemicals and protecting workers' health.

The sheet is part of HSE guidance *COSHH essentials: easy steps to control chemicals*. It describes the key points you need to follow to help reduce exposure to an adequate level. It is important to follow all the points, or use equally effective measures.

Rubber process dust arises in rubber making where ingredients are handled, weighed, added to or mixed with uncured natural rubber or synthetic elastomers. Rubber process dust does not include dust from abrasion of cured rubber.

Rubber process dust can cause cancer.

Get safety data sheets from your chemical suppliers. Use these to identify the more dangerous chemicals, and less dangerous substitutes.

For using other chemicals (eg when cleaning down, tackifying etc), refer to www.coshh-essentials.org.uk

Control approach 2 (engineering control) is recommended to control rubber process dust at mixing.

Some dusts are combustible. Seek expert advice.

For environmental advice see Further information on back page.

Access

- ✓ Restrict access to those staff who need to be there.

Design and equipment

- ✓ Keep dust exposures as low as possible. Use pre-weighed additives in process-compatible bags or in 'pre-dispersed' forms such as wax pellets, pastilles, granules with binder or dust-reduced powders.
- ✓ Enclose the mixer feed opening as much as possible.
- ✓ You need an air speed between 1 and 1.5 metres per second into the enclosure.
- ✓ Make sure a manometer or pressure gauge is fitted near the extraction point, to show that the extraction is working properly.
- ✓ Always confirm that the extraction is turned on and working at the start of work. Check the gauge.
- ✓ Also, extract any dust that is released from the top of the mill.
- ✓ 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.
- ✓ Check that workers tip bags with the open end away from them, and that the extraction catches the airborne dust.
- ✓ Bag crushing creates a lot of dust. Use an extracted bag collector, or have bags rolled up with the open end in the extractor hood.
- ✓ To reduce exposures, have workers work to one side of the enclosure.
- ✓ Workers should scoop powder gently - not dump it.
- ✓ Consult a qualified ventilation engineer to design new control systems (see Control guidance sheet FD14).

Maintenance

- ✓ Follow instructions in maintenance manuals.
- ✓ Keep equipment in effective and efficient working order.
- ✓ Repair faulty extraction systems immediately. Meanwhile, wear respiratory protective equipment (RPE).

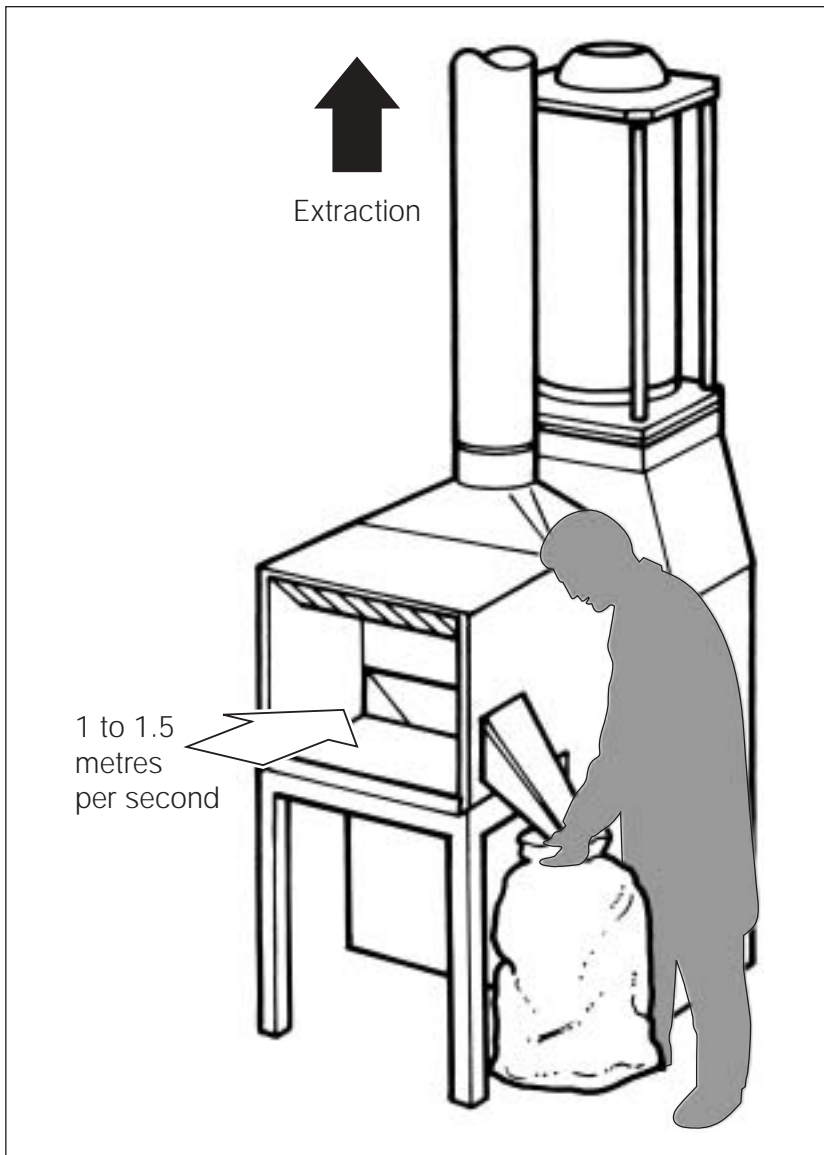
Examination and testing

- ✓ Look daily for signs of damage to the ducting, dust seals and air filter. Repair damage immediately.
- ✓ At least once a week, check that the extraction system and gauge work properly.
- ✓ You need to know the manufacturer's performance specification to know if extraction is working properly.
- ✓ If this information isn't available, hire a competent ventilation engineer to determine its performance.

- ✓ The engineer's report must show the target air speeds.
- ✓ 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 HSE publication HSG54).
- ✓ Keep records of all examinations and tests for at least five years.
- ✓ Review records to see if there are failure patterns that make planning maintenance easier.

Cleaning and housekeeping

- ✓ Every day, clear up accumulations of dirt in areas where people work all the time.
- ✓ Deal with spills immediately. This needs coveralls, a respirator and single-use gloves.
- ✓ Clean general workrooms once a week.
- ✓ Use a Type H vacuum cleaner fitted with a HEPA filter to clear up dust.
- ✗ Don't clean up with a brush or with compressed air.
- ✓ Store containers in a safe place.
- ✓ Keep lids on containers when they are not being filled or emptied.



Personal protective equipment (PPE)

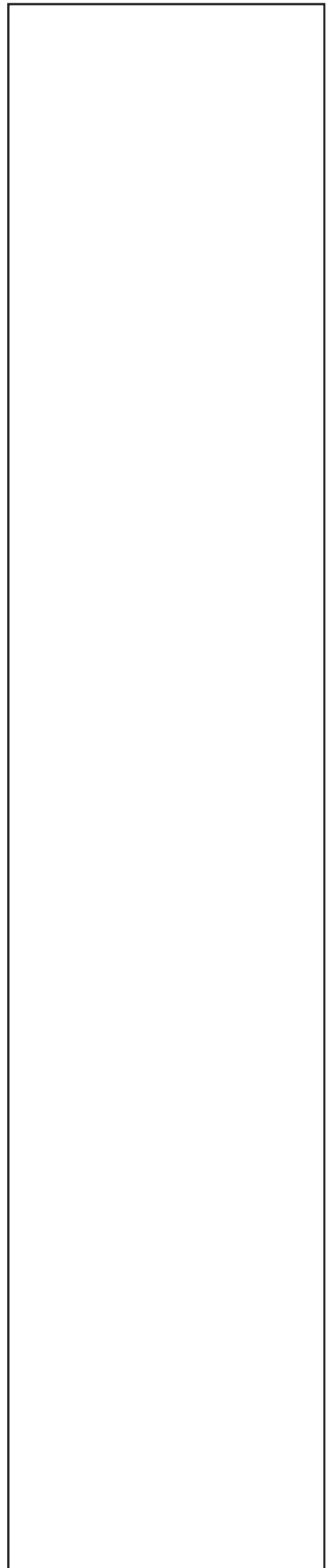
- ✓ Ask your safety-clothing supplier to help you get the right PPE.
- ✓ Respiratory protective equipment (RPE) should not be needed if the extraction is designed correctly and working properly.
- ✓ RPE is needed for maintenance and cleaning, and for clearing up spills.
- ✓ Use a P3 standard of RPE (Assigned Protection Factor 20). Consult your supplier for advice.
- ✓ Replace RPE filters as recommended by the supplier. Throw away disposable masks after one use.
- ✓ Keep RPE clean and store it away from dust.
- ✓ Protective gloves are needed. Use nitrile gloves.
- ✓ Throw away single-use gloves every time you take them off.
- ✓ Skin creams are important for skin protection and help in washing contamination from the skin. These are **not** 'barrier creams'. After work creams help to replace skin oils.
- ✗ Never allow compressed air use for removing dust from clothing.
- ✗ Workers must not take their coveralls home for washing. Use a contract laundry.

Training

- ✓ Tell workers that rubber process dust and fume can cause cancer.
- ✓ Provide health and safety training. Include managers. Ask your trade association (eg BRMA or RMA) for advice on training providers.
- ✓ Ensure training includes how to keep exposures low; how to check that the extraction system is working; how to use and look after PPE and RPE; and dealing with spills etc.

Supervision

- ✓ Check that the extraction is working properly; PPE is being used properly; and the rules on personal hygiene are being followed.
- ✓ Get safety data sheets from your suppliers and identify the more dangerous chemicals.
- ✓ Ask your workers to check their skin for dryness or soreness every six months. If these effects appear, check the proper use of skin creams and PPE.



Further information

- *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**
- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 **ISBN 0 7176 1485 9**
- *An introduction to local exhaust ventilation* HSG37 (Second edition) HSE Books 1993 **ISBN 0 7176 1001 2**
- *The selection, use and maintenance of respiratory protective equipment: A practical guide* HSG53 (Second edition) HSE Books 1998 **ISBN 0 7176 1537 5**
- *Safe to breathe: Dust and fume control in the rubber industry* Leaflet IACL95 HSE Books 1995 (single copy free or priced packs of 10 **ISBN 0 7176 0979 0**)
- *Controlling airborne contaminants in the workplace* Technical Guide TG7 British Occupational Hygiene Society 1987 **ISBN 0 9059 2742 7**
- See also Control guidance sheet 204 *Removing waste from a dust extraction unit*
- Health and safety consultants: the BOHS Faculty of Occupational Hygiene keeps lists of qualified hygienists who can help you. Contact BOHS on 0133 229 8087 or at www.bohs.org/

Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

Employee checklist

- Always follow the standard operating procedures.
- Is the extraction switched on and working properly?
- Check the gauge.
- Look for signs of leaks, wear and damage.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Make sure that bags etc aren't drawn into the extract ducts.
- Use, maintain and store your PPE in accordance with instructions.
- Clear up spills immediately.
- Throw away single-use gloves every time you take them off.
- 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.



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