



Control approach 3



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.

Shotblasting sand-moulded castings creates silica dust and metal dusts that are hazardous to health. Crystalline silica can cause serious respiratory diseases including cancer.

Control approach 3 (containment) is recommended to control dust from shotblasting smaller castings.

It is illegal to use sand as an abrasive.

You need also to control exposure to noise.

For environmental advice see Further information on the back page.

Dust when shot-blasting smaller castings in a cabinet

FD09

Containment

Access

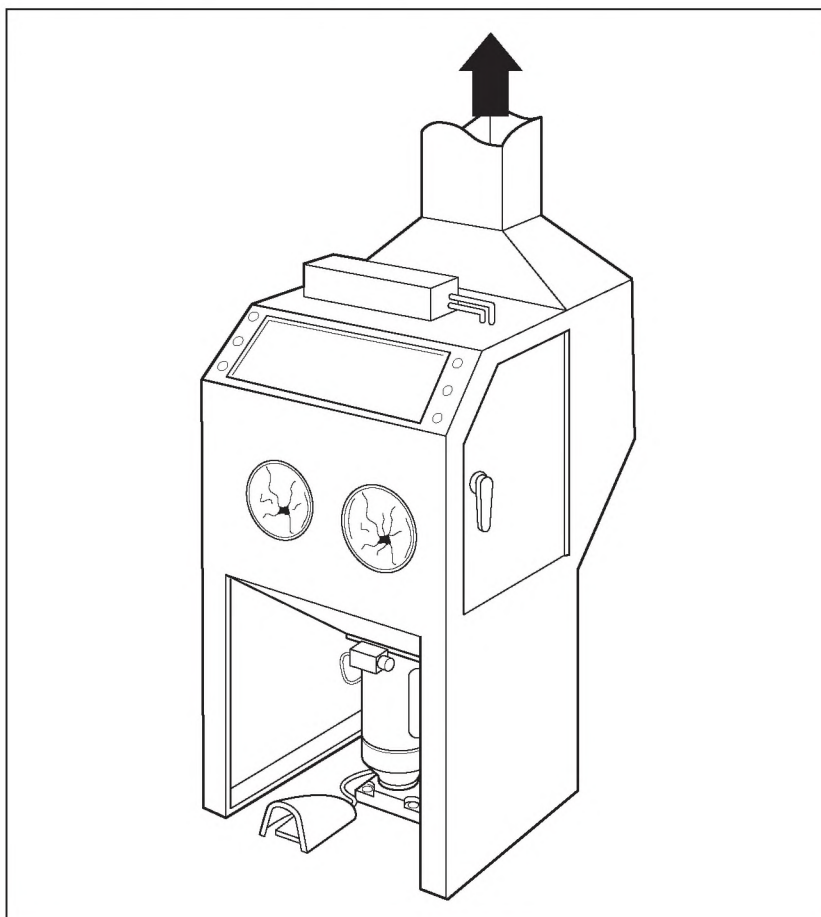
- ✓ Restrict access to those staff who need to be there.

Design and equipment

- ✓ Use a fully enclosed cabinet or booth for shotblasting, held under negative pressure.
- ✓ Ensure a pressure gauge is fitted and interlocked with the blasting medium supply.
- ✓ You need a high standard of filtration for the air discharged from the booth. Discharge filtered air outside the building, away from doors, windows and air inlets.
- ✓ Place the booth carefully to make loading and unloading easy.
- ✓ Run the booth for two minutes after blasting has ceased to clear the air.

Maintenance

- ✓ Follow instructions in maintenance manuals.
- ✓ Use a written system of work for maintenance and define the PPE necessary.
- ✓ Keep equipment in effective and efficient working order.
- ✓ If the extraction system is faulty, stop work until it is repaired.
- ✓ Abrasives wear out plant quickly. Plan regular maintenance.



Examination and testing

- ✓ Look daily for signs of damage to the ducting, fan and air filter. Noisy or vibrating fans can indicate a problem. Repair damage immediately.
- ✓ At least once a week, check that the extraction system and gauge work properly, with no dust leaks.
- ✓ 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 month (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.
- ✓ Clean general workrooms once a week to stop dust being stirred up and to reduce slips.
- ✓ Use a Type H vacuum cleaner fitted with a HEPA filter to clear up dust.
- ✓ Deal with spills immediately. This needs coveralls, a respirator and single-use gloves.
- ✗ 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.
- ✓ Dispose of wastes safely.

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 your supplier. Throw away disposable masks after one use.
- ✓ Keep RPE clean and store it away from dust.
- ✓ 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.

Health surveillance

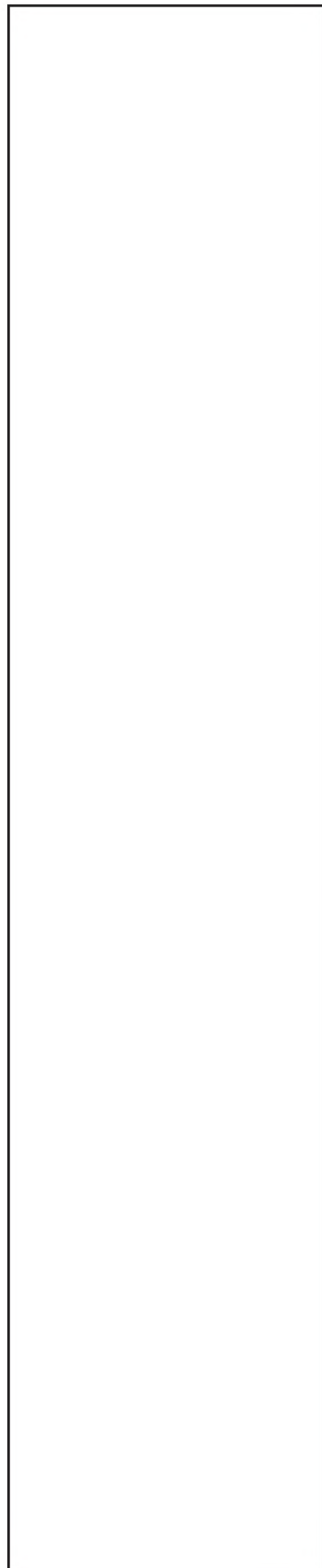
- ✓ Consider health surveillance for lung function and other health effects.
- ✓ Consult an occupational health professional (see Further information).

Training

- ✓ Tell your workers that shotblasting dust can cause serious lung disease.
- ✓ Provide health and safety training. Include supervisors and managers.
- ✓ 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 what to do if something goes wrong.

Supervision

- ✓ Check that the extraction is working properly; PPE is being used properly; and the rules on personal hygiene are being followed.
- ✓ Ensure the health surveillance programme is being carried out for everyone that needs it.
- ✓ 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

- *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**
- *Controlling airborne contaminants in the workplace* Technical Guide TG7 British Occupational Hygiene Society 1987 **ISBN 0 9059 2742 7**
- 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/
- Occupational health professionals: details of doctors and nurses can be found in the Yellow Pages under 'Health and safety consultants' and 'Health authorities and services'. Also visit the NHS website at www.nhsplus.nhs.uk

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.
- ☐ Co-operate with health surveillance schemes.
- ☐ Use, maintain and store your PPE in accordance with instructions.
- ☐ 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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