

FD3

COSHH essentials for foundries



This information will help employers (including the self-employed) comply with the Control of Substances Hazardous to Health

Regulations 2002 (COSHH), as amended, to control exposure to metal and casting fume and protect workers' health.

It is also useful for trade union safety representatives.

This sheet describes good practice using RPE.

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.

Molten metal fume (foundry fume) is hazardous to health. Ferrous foundry fume can cause lung cancer.

Some metal fumes cause metal fume fever. Lead and lead alloys have special provisions.

Casting fume is irritating to breathe; castings give off hazardous fumes for a considerable time

Main points

- Keep exposure to fume as low as possible, using all the controls in this sheet.
- Make sure the controls work.
- Health monitoring is often needed. See sheet G401.

Molten metal fume: Pouring and casting

Control approach R

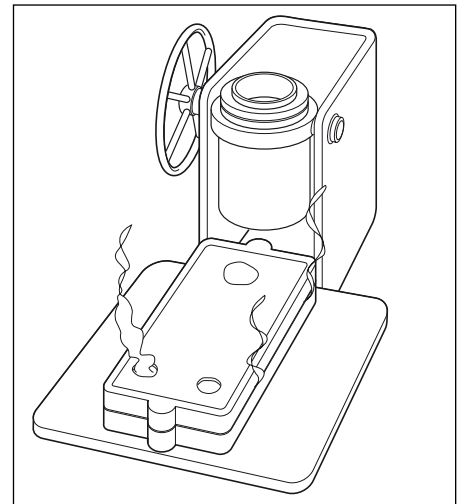
Respiratory protective equipment (RPE)

Access and premises

- ✓ Only allow access to authorised staff.
- ✓ Make sure other workers stand well clear of moving ladles (cranks or bogeys) and casting operations.

Equipment

- ✓ RPE is normally needed.
- ✓ Ensure that users check their RPE works properly every time they use it.
- ✓ Organise work so pouring and casting is done in a designated area with effective fume dispersal.
- ✓ Reduce fume. Whenever possible keep the ladle covered during transport. Can you use a refractory tundish to help suppress fume?



Maintenance, examination and testing

- ✓ Follow instructions in maintenance manuals - keep equipment in effective and efficient working order.
- ✓ At least once a week, check visually that the roof vents or extractor fans are clearing the fume properly.
- ✓ Noisy or vibrating fans can indicate a problem.
- ✓ Examine and test thoroughly non-disposable RPE at least once every three months.
- ✓ Keep records of these tests.

Personal protective equipment (PPE)

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

Respiratory protective equipment (RPE)

- ✓ RPE is needed for casting molten metal, and for maintenance and cleaning.
- ✓ Powered or air fed RPE is more comfortable to wear.
- ✓ Select RPE that suits the wearer, the job and the work environment.
- ✓ Provide RPE with an assigned protection factor (APF) of at least 20. See sheet R3.

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- ✓ Disposable RPE is acceptable.
 - ✓ Make sure all RPE is properly fit-tested - get advice from your supplier.
 - ✓ Replace RPE filters as recommended by your supplier. Throw away disposable RPE at the end of the shift.
 - ✓ Keep RPE clean.

Other protective equipment

- ✓ Provide protective clothing that is suitable for work with molten metal.
 - ✓ Use a contract laundry or suitable equivalent to wash work clothing.
- Caution: Never allow use of compressed air to remove dust from clothing.**

Health monitoring

- ✓ You may need health monitoring for occupational lung disease. See sheet G401.
- ✓ Consult an occupational health professional. See 'Useful links'.

Cleaning and housekeeping

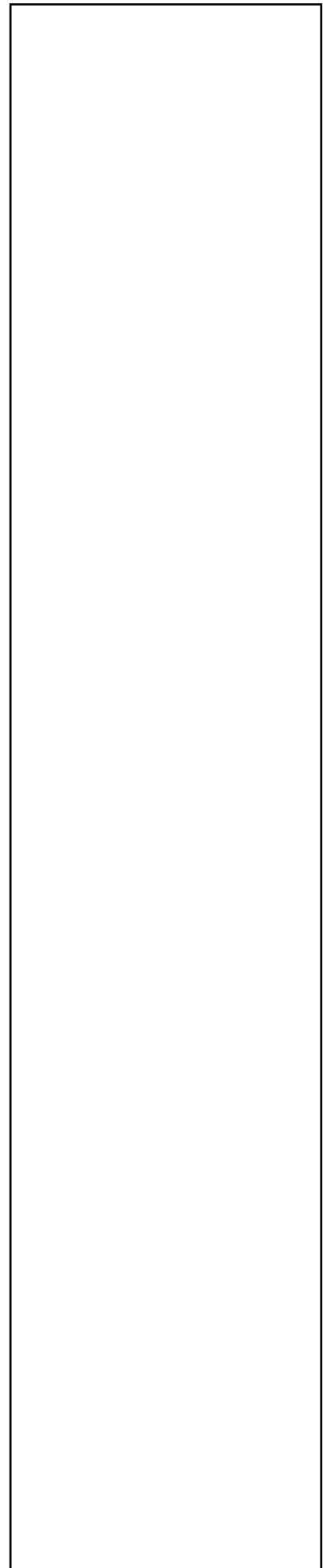
- ✓ Clean general workrooms once a week to stop dust being stirred up.
 - ✓ Use a Type H vacuum cleaner fitted with a HEPA filter to clear up dust.
- Caution: Don't use a brush or compressed air.**

Training and supervision

- ✓ Tell workers that foundry fume can cause serious lung diseases.
- ✓ Working in the right way and using the controls correctly is important for exposure control. Train and supervise workers. See sheet FDO.

Further information

- *The selection, use and maintenance of molten metal protective clothing*
Guidance HSE Books 1996 ISBN 0 7176 1162 0
- *Maintenance, examination and testing of local exhaust ventilation*
HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *Respiratory protective equipment at work: A practical guide*
HSG53 (Third edition) HSE Books 2005 ISBN 0 7176 2904 X
- *Lead and you: A guide to working safely with lead* Leaflet
INDG305(rev1) HSE Books 1998 (single copy free or priced packs of 15 ISBN 0 7176 1523 5) Web version:
www.hse.gov.uk/pubns/indg305.pdf
- For environmental guidelines see sheet FDO



Useful links

- HSE priced and free publications are available from HSE Books
Tel: 01787 881165 Website: www.hsebooks.co.uk.
- HSE free leaflets can be downloaded from HSE's website:
www.hse.gov.uk/pubns.
- 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

- Check that your RPE works properly every time you use it.
- 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 monitoring.
- Use, maintain and store your PPE in accordance with instructions.
- Never use solvents to clean your skin.

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.