

# FD0

## COSHH essentials for foundries



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

It is also useful for trade union safety representatives.

This sheet describes good practice for controlling exposure.

Dust from sand, fettling and kiln relining can cause silicosis, which leads to disablement and early death.

Ferrous foundry fume may cause cancer.

Other foundry fume and spray mists can cause lung diseases including asthma.

# Advice for managers

## Introduction

Casting sand, fettlings and kiln linings contain silica and, when dry, produce silica dust known as respirable crystalline silica (RCS). RCS is also known as respirable  $\alpha$ -quartz, cristobalite, or 'free silica'.

### *Hazardous substances in common materials*

sand	up to 100% crystalline silica
Investment casting slip	may contain silica flour.
Investment casting wax	may contain modified colophony (rosin)
spray coatings	may contain chromates, epoxy compounds, isocyanates, or other hazardous substances - see the safety data sheet.

## The risks

Inhaling RCS leads to silicosis. Silicosis is a serious and irreversible lung disease that causes permanent disablement and early death, and it is made worse by smoking.

All RCS is hazardous. 'Respirable' means that the dust is invisibly fine, and gets deep into the lungs.

Ferrous foundry fume can cause cancer.

Fume from pattern assembly can cause asthma, and spray mists can cause lung diseases including asthma.

*This is one in a series of advice sheets for anyone working in foundries*

### Advice sheets concerning silica:

- FD4 Sand plant
- FD5 Coremaking and shell moulding (small scale)
- FD6 Knock-out, shakeout, etc
- FD7 Fettling small castings
- FD8 Fettling large castings
- FD9 Abrasive blasting small castings in a cabinet
- FD10 Gouging
- FD14 Furnace relining

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**Other advice sheets:**

- FD1 Fume: General ventilation
- FD2 Molten metal fume: Melting
- FD3 Molten metal fume: Pouring and casting
- FD11 Pattern assembly (investment casting)
- FD12 Spray coating a large casting (open workshop)
- FD13 Cleaning dust collectors

**Action**

You need to find out which risks your workers are being exposed to. If you are unsure, you need to arrange for exposure measurements. See sheet G409.

Then you need to minimise the amount of hazardous material being breathed-in by staff by reducing fume and/or dust. Look carefully at the control measures that can be used, some are more cost effective and practical for each situation than others.

Before acting, make sure the advice really fits your situation. Following all the advice in these sheets means that you will normally comply with workplace exposure limits (WEL). Read the advice in each of the sheet(s) you downloaded. Compare it with what you do now.

You may already have the right controls in place, but are they all working properly? When were they last checked? Are they always used when needed? Is the RCS exposure controlled?

You need to keep all controls in good working order. This means mechanical controls (eg extraction, respirator), administrative controls (eg supervision, health surveillance) and operator behaviour (following instructions). Look at all aspects of the advice, don't pick and choose. The points work together to provide 'adequate control'. See sheet G406 for advice on engineering controls.

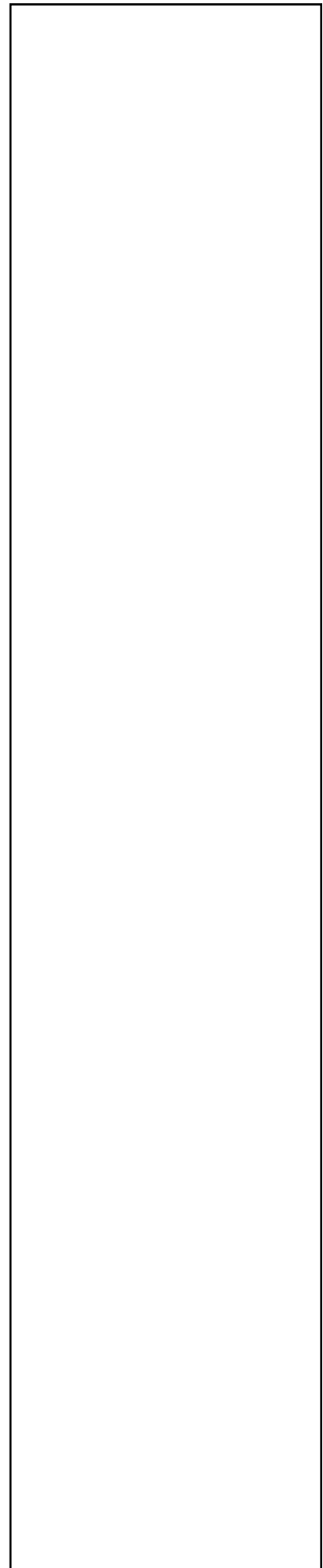
Show that control is being sustained – keep good records. You need to carry out health surveillance (see sheet G401, G402 or G404) and take exposure measurements (see sheet G409).

If you are in doubt, seek expert help. Remember, just because this advice means that you have to change old working practices or spend money on new controls, that doesn't make it unsuitable! Decide how best to make any changes required 'across the board'.

If you do need expert help, please don't give up. Ask your trade association, trade union, or log onto [www.bohs.org](http://www.bohs.org).

**Facilities**

Provide clean facilities: a washroom, showers, storage for clean and contaminated work clothing, and a refreshment area.



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## Procedures

Need to source list of procedures from rest of sheets as with SLO etc

## Information, training and supervision

Tell workers:

- that dust from sand, fettling and kiln relining can cause silicosis, which leads to disablement and early death;
- that ferrous foundry fume may cause cancer, and other foundry fume can cause lung diseases;
- that there may be an asthma risk with investment casting or spray coating castings;
- to avoid breathing in dust, mist or fume;
- to do the job in the correct way and minimise dust clouds;
- to always use the dust suppression and extraction equipment properly;
- to keep this equipment clean and working properly;
- if equipment is not working - report it;
- to keep their protective equipment clean, and wear it properly;
- to keep surfaces clean as this helps to prevent dust being made airborne again;
- to wash dust off skin
- to avoid cotton or knitted clothing; and
- to vacuum clean, not sweep.

Train and supervise workers - you need to make sure they are doing the job in the right way, and using controls properly to reduce their exposure as low as possible. Include supervisors and managers in health and safety training.

Training should include:

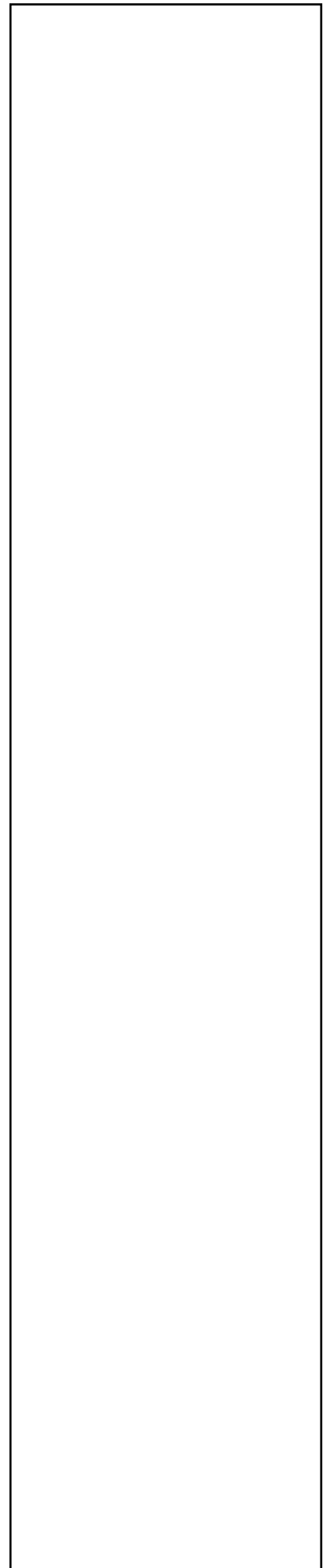
- how to use the controls and how to check that they are working;
- how to maintain and clean equipment safely;
- how to use and look after personal protective equipment (PPE); and
- what to do if something goes wrong.

Remind workers that cotton or knitted work clothes hold dust that can be inhaled later.

Supervision means checking workers:

- use the controls provided;
- follow the correct work method;
- turn up for health surveillance; and
- are following the rules on personal hygiene.

Contractors also need supervision. Find out if they are bringing hazardous substances on site, and how they will protect your workers from them.

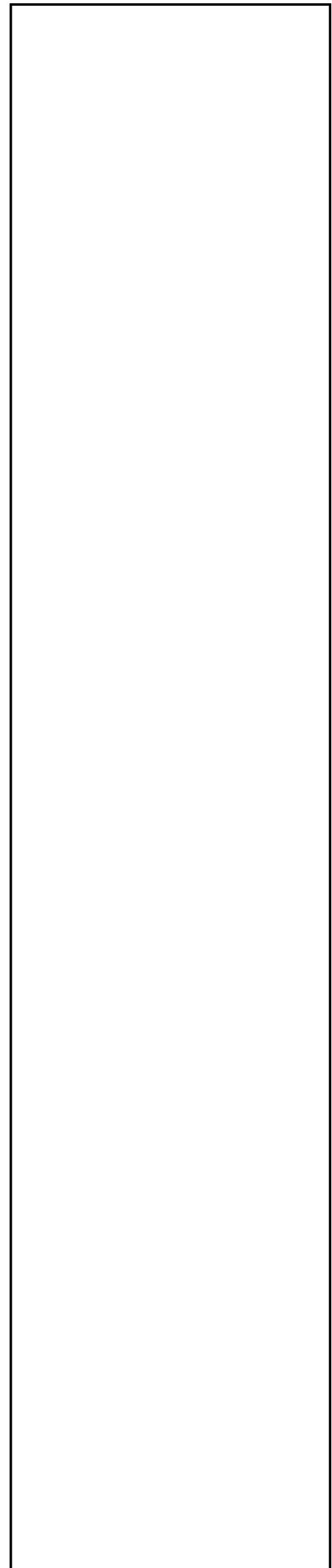


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### **Environmental guidelines**

Releases and wastes 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). For more information, see [www.netregs.gov.uk/netregs](http://www.netregs.gov.uk/netregs).



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.