

# CN7

## COSHH essentials in construction: Silica



The Control of Substances Hazardous to Health Regulations 2002 (COSHH) require employers to ensure that exposure is prevented or, where this is not reasonably practicable, adequately controlled. This guidance gives practical advice on how this can be achieved by applying the principles of good practice for the control of exposure to substances hazardous to health, as required by COSHH.

It is aimed at people whose responsibilities include the management of substances hazardous to health at work (eg occupational health specialists, anyone undertaking COSHH assessments, supervisors and is also useful for trade union and employee safety representatives). It will help you carry out COSHH assessments, review existing assessments, deliver training and supervise activities involving substances hazardous to health.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, 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.

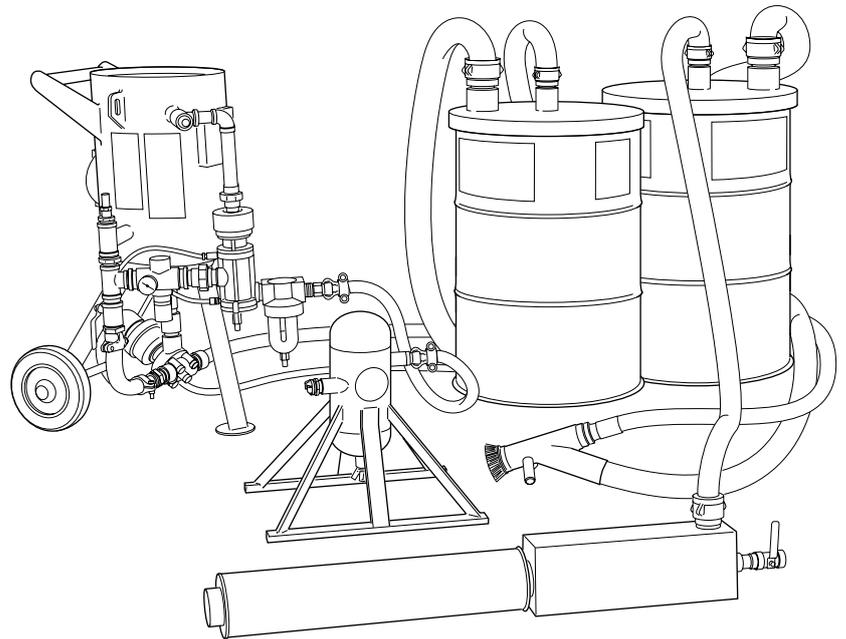
See Essential information near the end of the sheet.

# Abrasive blasting

## Control approach Engineering and RPE

### What this Sheet Covers

This sheet describes good control practice when abrasive blasting.



It covers the key points you need to follow to reduce exposure to an adequate level. Follow all the points, or use equally effective measures.

### Hazards

- ✓ This type of work creates very high levels of dust.
- ✓ The dust may contain respirable crystalline silica (RCS).
- ✓ Breathing this dust can cause serious lung diseases like silicosis, chronic obstructive pulmonary disease (COPD) and even lung cancer.
- ✓ These diseases cause permanent disability and early death.
- ✓ The material being worked on may contain other hazardous substances, eg lead.
- ✓ Skin contact with dusts and prolonged or frequent contact with water may cause dermatitis.
- ✓ A good standard of control is needed because the risk to health is high.

### Before starting

- ✓ Before starting work consider:
  - can you use a different method like steam cleaning?

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### Access to work area

- ✓ Set up an exclusion zone. Separate it off and post warning signs.
- ✓ Use sheeting where there is a risk of abrasive or dust spreading. Maintain it to stop gaps developing during the job.
- ✓ Allow access to authorised and appropriately trained people only.
- ✓ Limit the number of people near the work.

### Equipment and procedures

- ✓ Use a 'silica free' abrasive material, ie containing less than 1% silica.
- ✓ Use wet/saturation or vacuum blasting equipment.
- ✓ Set up the blasting equipment following the manufacturer's instructions.
- ✓ Use the lowest pressure levels suitable for the work.
- ✓ Put any compressor in a well ventilated area, upwind from blasting work.
- ✓ Ensure all safety devices are present and working.
- ✓ Position cable safely to limit trip risks.

**Caution:** Do not use sand.

### Respiratory protective equipment (RPE)

- ✓ Provide the shot blaster with an air-fed 'CE' marked abrasive blasting helmet with a UK Standard Assigned Protection Factor (APF) of at least 40.
- ✓ Air supplied to the blasting helmet should be breathing quality.
- ✓ Position airlines so that they are not liable to be blocked or damaged by moving vehicles etc.
- ✓ Replace blasting helmet visors as soon as pitting or frosting occurs.
- ✓ Provide RPE with an APF of at least 20 for the 'kettleman' working nearby.
- ✓ Fit testing is required for RPE with a tight fitting face seal.
- ✓ Workers wearing tight fitting RPE should be clean shaven, trained how to fit it properly and how to look after it.
- ✓ Tell workers to discard disposable RPE at the end of the shift, or sooner if their RPE becomes blocked with dust.
- ✓ Change the filters on respirators in accordance with manufacturers' recommendations and if:
  - the shelf-life expiry date has passed;
  - they are damaged or visibly contaminated; or
  - they become harder to breathe through.
- ✓ Examine and test non-disposable RPE and air supply thoroughly at least once every month.
- ✓ Tell workers to check RPE is working properly before every use.
- ✓ If the RPE worn by the kettleman is required for extended periods, eg longer than 1 hour continuously, use powered respirators.
- ✓ Keep RPE clean and store it in a clean place.

### Personal protective equipment (PPE)

- ✓ Provide blasting suits/coveralls that do not retain dust and protect against water.
- ✓ Provide protective gloves and footwear.
- ✓ Ask your safety clothing supplier if you need any advice on selecting suitable protective equipment.
- ✓ Provide storage for PPE to prevent damage or contamination when not in use.
- ✓ Keep any PPE cleaned and replace at recommended intervals.



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- ✓ Use a contract laundry or a suitable equivalent to wash work clothing. Don't allow workers to do this at home.

### Personal decontamination and skin care

- ✓ Provide warm water, mild skin cleansers, and soft paper or fabric towels for drying. Avoid abrasive cleansers.
- ✓ Provide pre-work skin creams, which will make it easier to wash dirt from the skin.
- ✓ Provide after-work creams to replenish skin oils.

### Maintenance, examination and testing

- ✓ Keep all equipment used for the task in effective working order. Maintain it as advised by the supplier.
- ✓ Regular inspection is important as the process is destructive by its nature.
- ✓ Look for signs of damage and make repairs.
- ✓ Get a competent person to examine the system thoroughly and test its performance regularly.

### Cleaning and housekeeping

- ✓ Clean up as soon as possible.

**Caution:** Avoid the use of brushes or compressed air for cleaning surfaces.

### Health surveillance

- ✓ Provide health surveillance for silicosis where there is a reasonable likelihood that silicosis may occur in your workplace. See G404.
- ✓ Provide health surveillance for dermatitis where there is a reasonable likelihood that dermatitis may occur in your workplace. See G403.

### Training and supervision

- ✓ Tell workers about the hazards associated with their work.
- ✓ Provide workers with training on:
  - working safely with hazardous substances;
  - when and how to use controls;
  - how to check they are working.
- ✓ Have a procedure to check that control measures are in place and being followed.
- ✓ Involve managers and supervisors in health and safety training.

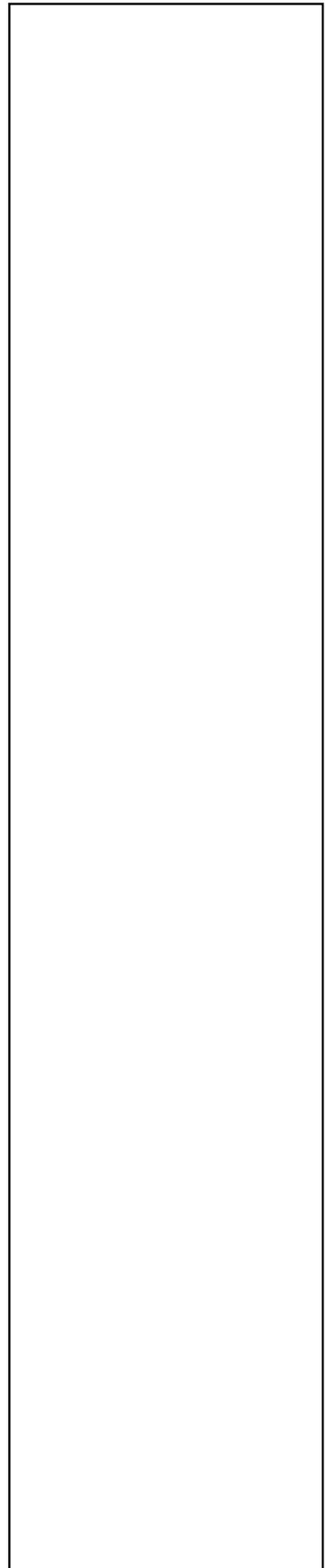
### Essential Information

You can find the full COSHH essentials series at [www.hse.gov.uk/coshh/essentials/index.htm](http://www.hse.gov.uk/coshh/essentials/index.htm)

*Advice for managers* COSHH Guidance Sheet CN0  
[www.hse.gov.uk/pubns/guidance/cn0.pdf](http://www.hse.gov.uk/pubns/guidance/cn0.pdf)

*Small scale clearing of rubble, dust and debris* COSHH Guidance Sheet CN5  
[www.hse.gov.uk/pubns/guidance/cn5.pdf](http://www.hse.gov.uk/pubns/guidance/cn5.pdf)

Health surveillance, monitoring and sampling sheets are available at [www.hse.gov.uk/pubns/guidance/gseries.htm](http://www.hse.gov.uk/pubns/guidance/gseries.htm)



*Health surveillance for occupational dermatitis* COSHH Guidance Sheet G403 HSE 2011 [www.hse.gov.uk/pubns/guidance/g403.pdf](http://www.hse.gov.uk/pubns/guidance/g403.pdf)

*Health surveillance for silicosis* COSHH Guidance Sheet G404 HSE 2011 [www.hse.gov.uk/pubns/guidance/g404.pdf](http://www.hse.gov.uk/pubns/guidance/g404.pdf)

### Further information

Occupational Safety and Health Consultants Register [www.oshcr.org/](http://www.oshcr.org/)

For more information on construction dust risks and controls see [www.hse.gov.uk/construction/healthrisks/](http://www.hse.gov.uk/construction/healthrisks/)

*Construction dust* Construction information sheet CIS36 (rev2) HSE 2013 [www.hse.gov.uk/pubns/cis36.htm](http://www.hse.gov.uk/pubns/cis36.htm)

*Controlling construction dust with on-tool extraction* Construction information sheet CIS69 HSE 2013 [www.hse.gov.uk/pubns/cis69.htm](http://www.hse.gov.uk/pubns/cis69.htm)

*Respiratory protective equipment at work: A practical guide* HSG53 (Fourth edition) HSE Books 2013 [www.hse.gov.uk/pubns/books/HSG53.htm](http://www.hse.gov.uk/pubns/books/HSG53.htm)

*Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV)* HSG258 HSE Books 2011 [www.hse.gov.uk/pubns/books/hsg258.htm](http://www.hse.gov.uk/pubns/books/hsg258.htm)

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit [www.hse.gov.uk/](http://www.hse.gov.uk/). You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

### Employee checklist

- Are you sure about safe work procedures?
- Is the equipment in good condition and working properly?
- Is the extraction working?
- Look for signs of leaks, wear and damage every day.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Wash your hands before eating, drinking, smoking, using the lavatory and after work.
- Co-operate with health surveillance.
- Use, maintain and store any PPE provided in accordance with instructions.

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