

# CN5

## COSHH essentials in construction: Silica



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 respirable crystalline silica (RCS) and protect workers' health.

It is also useful for trade union safety representatives.

This sheet describes good practice using engineering control - water suppression and a filtered air supply to the vehicle cab.

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.

### Main points

- High dust levels result from clearing demolition waste.
  - Keep the cab clean - keep dust out.
  - Breathing in dust may cause silicosis.
  - Keep exposure as low as possible using all the controls in this sheet.
- Make sure the controls work.

# Clearing and removing rubble

## Control approach 2 Engineering control

### Hazard

- ✓ Construction work can produce airborne respirable crystalline silica (RCS).
- ✓ All RCS is hazardous, causing silicosis. This is a serious lung disease causing permanent disability and early death.
- ✓ Silicosis is made worse by smoking.
- ✓ 'Respirable' means that the dust can get to the deepest parts of the lung. Such fine dust is invisible under normal lighting.
- ✓ Keep inhalation of RCS as low as possible.
- ✓ When all controls are applied properly, less than 0.1 mg/m<sup>3</sup> RCS is usually achievable (based on an 8-hour time-weighted average).

### *Crystalline silica concentrations in common materials*

- ✓ See table in sheet CN0.

### Access and premises

- ✓ Only allow access to authorised staff.
- ✓ Secure a good supply of water for dust suppression.
- ✓ Provide good access to enable safe waste removal.

### Equipment

- ✓ Use vehicles fitted with a HEPA filtered air supply to the cab. See sheet CN11.
- ✓ Use respiratory protective equipment (RPE) for hand-shovelling rubble.
- ✓ Fit an indicator or alarm to show if filters have blocked or failed.
- ✓ Keep roadways and rubble damp to help suppress dust.

### Procedures

- ✓ Always confirm that the vehicle cab air supply is turned on and working before starting work.
- ✓ Always confirm that water spray is turned on and working before starting work.
- ✓ Keep doors and windows closed while working.
- ✓ Confirm that any sweeper bag filter is not damaged before starting to clear debris.
- ✓ Make sure you can get spares easily.
- ✓ Make sure that workers check that their RPE works properly every time they put it on.

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### Maintenance, examination and testing

- ✓ Minerals and silica-containing dusts are very abrasive. Plan regular maintenance.
- ✓ Follow the manufacturer's maintenance schedules - keep equipment in effective and efficient working order.
- ✓ If the equipment is faulty, stop work until it is repaired.
- ✓ Daily, look for signs of damage to the air filter.
- ✓ Check that filter seatings are in good condition.
- ✓ You need to know the manufacturer's performance specifications to know if the equipment is working properly.
- ✓ Keep this information in your testing log-book.
- ✓ Get a competent engineer to examine the system thoroughly and test its performance regularly.
- ✓ For control cabs, see sheet CN11.
- ✓ Examine and test RPE thoroughly at least once every three months.
- ✓ Keep records of all examinations and tests for at least five years.
- ✓ Review records - failure patterns show where preventive maintenance is needed.
- ✓ Carry out air sampling to check that the controls are working well. See sheet G409.

### Personal protective equipment (PPE)

- ✓ Ask your supplier, or the company health and safety advisor to help you select the right PPE.

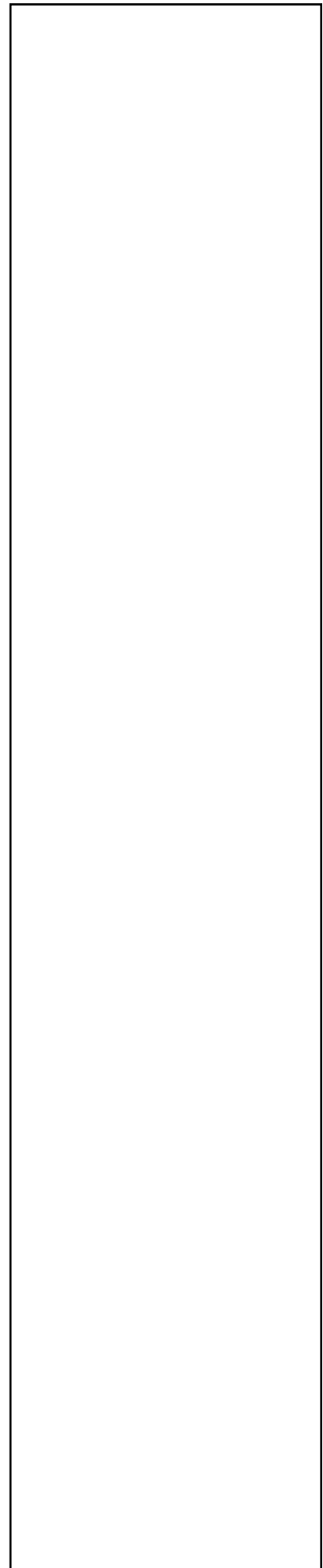
### *Respiratory protective equipment (RPE)*

- ✓ RPE should not be needed inside the cab if the filtered air supply is working properly and the doors and windows are shut.
- ✓ Can you avoid driving vehicles while wearing RPE?
- ✓ RPE is needed for manual rubble clearance.
- ✓ Powered or air-fed RPE is more comfortable to wear.
- ✓ Select RPE that suits the wearer, the job and the work environment.
- ✓ Decide the level of protection from air sampling data. Otherwise, use RPE with an assigned protection factor (APF) of at least 10. See sheet R2.
- ✓ Disposable RPE is acceptable.
- ✓ Make sure all RPE is properly fit-tested - get advice from your supplier.
- ✓ Replace RPE filters as recommended by the supplier. Throw away disposable RPE at the end of the job or the end of the shift.
- ✓ Keep RPE clean.

### *Other protective equipment*

- ✓ Provide coveralls that do not retain dust. Use synthetic fabrics - not cotton or knitted.
- ✓ Skin creams help in washing contamination from the skin. After-work creams help to replace skin oils.

**Caution: Never allow use of compressed air for removing dust from clothing.**



### Cleaning and housekeeping

- ✓ Clean the control cab at least once a week. Fine dust on internal surfaces suggests poor control. See sheet CN11.
- ✓ Use dust-free cleaning methods (eg wet cleaning) as far as possible.

### Training and supervision

- ✓ Tell workers that silica dust 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 CN0.

### Further information

- *Respiratory protective equipment at work: A practical guide* HSG53 (Third edition) HSE Books 2005 ISBN 0 7176 2904 X
- *Silica* Construction Information Sheet CIS36(rev1) HSE Books 1999
- For environmental guidelines see sheet CN0

### Useful links

- Construction trade associations may advise on health and safety consultants and training providers.
- HSE priced and free publications are available from HSE Books Tel: 01787 881165 Website: [www.hsebooks.co.uk](http://www.hsebooks.co.uk).
- HSE free leaflets can be downloaded from HSE's website: [www.hse.gov.uk/pubns](http://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](mailto:hse.infoline@natbrit.com).
- Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at [www.bohs.org](http://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](http://www.nhsplus.nhs.uk).

### Employee checklist

- Are you sure how to use all dust controls?
- Is the cab clean air supply working? Are the windows shut?
- Is the water suppression 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.
- Make suggestions to improve the effectiveness of dust control.
- Use, maintain and store your protective equipment in accordance with instructions.
- Use skin creams provided as instructed.

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.