

# ST1

## COSHH essentials for stonemasons: 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 good general ventilation.

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 can result from stone sawing.
- Breathing in dust may cause silicosis.
- Keep exposure as low as possible using all the controls in this sheet. Make sure the controls work.
- You need air sampling. See sheet G409.
- Health surveillance is usually needed. See sheet G404.

# Primary and secondary sawing

## Control approach 2 Engineering control

### Hazard

- ✓ Stonemasonry 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 ST0.

### Access and premises

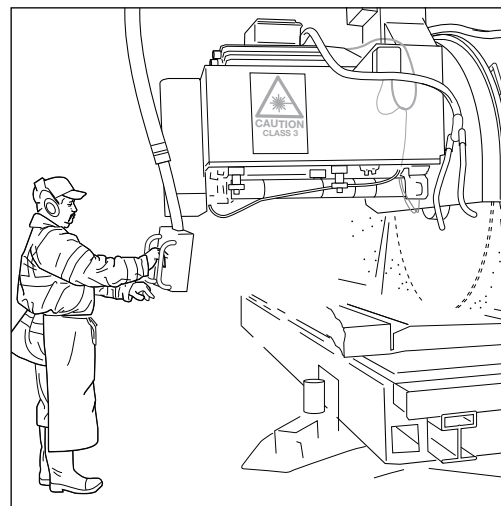
- ✓ Isolate machinery so that dust doesn't affect other workers.
- ✓ Where possible, use CCTV to monitor the process and reduce the need for people to be there.
- ✓ Locate the controls away from the machinery.
- ✓ Floors should slope gently towards gulleys, to help dust removal by wet washing.

### Equipment

- ✓ Can you reduce dust by using thinner-bladed and slower-moving reciprocating saws in place of a circular saw?
- ✓ Can you use diamond-coated wire for cutting?
- ✓ Remember, although water-suppression is effective, mist still contains fine dust particles, so position spray baffles inside the guard to catch the water jet from the cutting channel.

### Procedures

- ✓ Check that there is adequate water for dust suppression.



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### Maintenance, examination and testing

- ✓ Minerals and silica-containing dusts are very abrasive. Plan regular maintenance.
- ✓ Follow the instructions in the manual - keep equipment in effective and efficient working order.
- ✓ Clean down the equipment before starting maintenance - use wet or dustless methods.
- ✓ Spray baffles wear out quickly. They need frequent replacement.
- ✓ Make sure the water suppression is positioned and used correctly; repair any faulty equipment immediately.
- ✓ Maintain all respiratory protective equipment (RPE) in effective, clean and efficient working order.
- ✓ Daily, look for signs of damage.
- ✓ At least once a week, check that water suppression works properly.
- ✓ Check that the spray suppression (guard baffles, water jet interceptor) is in good condition.
- ✓ Get a competent ventilation engineer to examine the system thoroughly and test its performance regularly.
- ✓ 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 to help you select the right PPE.
- ✓ Provide storage for clean and contaminated PPE.

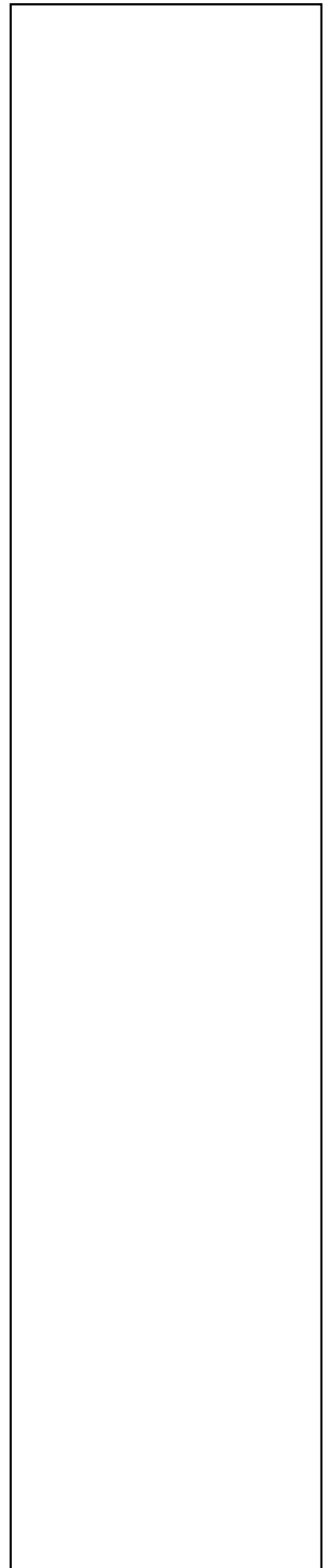
### Respiratory protective equipment (RPE)

- ✓ RPE may be needed for work near the equipment while it is running.
- ✓ Select RPE that suits the wearer, the job and the work environment. Powered or air-fed RPE is more comfortable to wear.
- ✓ Decide the level of protection from air sampling data. Otherwise, use RPE with a UK standard assigned protection factor (APF) of at least 20. See sheet R3.
- ✓ Disposable RPE is acceptable.
- ✓ Make sure all RPE is properly fit-tested - get advice from your supplier.
- ✓ Make sure that workers check their RPE works properly before use.
- ✓ 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 and store it away from dust.

### Other protective equipment

- ✓ Workers also need coveralls, eye and face protection, hearing protection, a hard hat (worn correctly), and protective gloves and footwear.
- ✓ Provide clean, dust-resistant (eg paper or nylon) coveralls.
- ✓ 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.**



### Health surveillance

- ✓ You need health surveillance unless exposure to RCS is well below the limit. See sheet G404.
- ✓ Consult an occupational health professional - see 'Useful links'.

### Cleaning and housekeeping

- ✓ Wash down the workroom at the end of each day's work and clear up sludge.

### 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 ST0.

### Further information

- *Respiratory protective equipment at work: A practical guide* HSG53 (Third edition) HSE Books 2005 ISBN 0 7176 2904 X
- *Controlling exposure to stonemasonry dust: Guidance for employers* HSG201 HSE Books 2001 ISBN 0 7176 1760 2
- For environmental guidelines see sheet ST0

### Useful links

- The Stone Federation may advise on health and safety consultants and training providers. Website: [www.stone-federationgb.org.uk](http://www.stone-federationgb.org.uk).
- 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.
- 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).

This document is available at: [www.hse.gov.uk/pubns/guidance/](http://www.hse.gov.uk/pubns/guidance/) and [www.hse.gov.uk/coshh/essentials/](http://www.hse.gov.uk/coshh/essentials/)

**This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

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### Employee checklist

- Are you sure how to use all dust controls?
- Is the equipment switched off and locked off for maintenance and cleaning?
- Is the equipment in good condition and working properly?
- 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.
- Co-operate with health surveillance.
- Use, maintain and store your protective equipment in accordance with instructions.
- Use skin creams provided as instructed.