

SL1

COSHH essentials for slate works: 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 slate 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 sawing

Control approach 2 Engineering control

Hazard

- ✓ Cutting, splitting or dressing slate 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/m³ RCS is usually achievable (based on an 8-hour time-weighted average).

Crystalline silica concentrations in common materials

- ✓ Slate contains up to 40% crystalline silica.

Access and premises

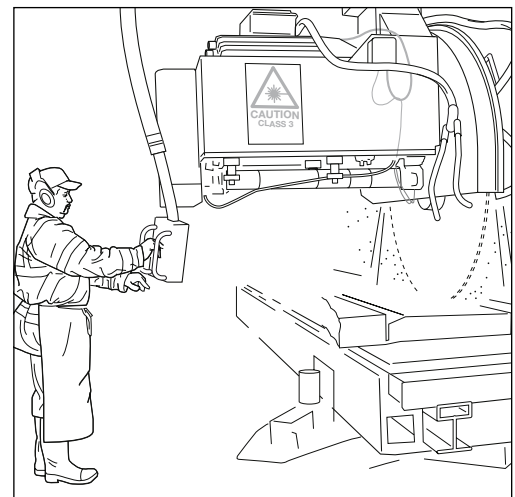
- ✓ Restrict access to the area while the equipment is running.
- ✓ Use CCTV to monitor the process and reduce the need for people to be there.
- ✓ Locate the controls away from the machinery.
- ✓ Floors should slope gently towards gulleys, to help dust removal by wet washing.

Equipment

- ✓ Can you use diamond-coated wire for cutting?
- ✓ Use water suppression to reduce dust emissions.
- ✓ 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.
- ✓ Ensure that respiratory protective equipment (RPE) is worn for any work near the running saw.

Procedures

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



Maintenance, examination and testing

- ✓ Minerals and silica-containing dusts are very abrasive. Plan regular maintenance.
- ✓ Follow instructions in maintenance manuals - keep equipment in effective and efficient working order.
- ✓ If the water suppression is faulty, stop work until it is repaired.
- ✓ 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. Spray baffles wear out quickly and need frequent replacement.
- ✓ Get a competent 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.

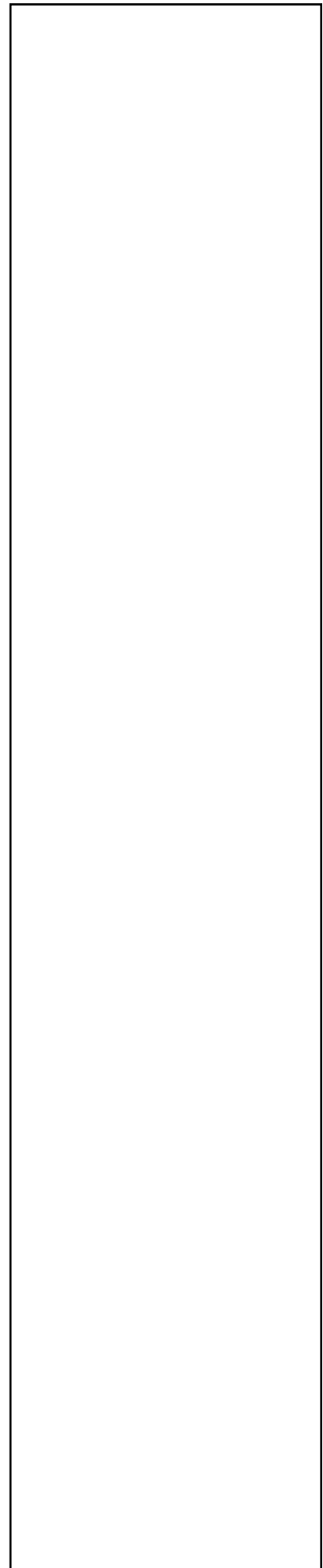
Respiratory protective equipment (RPE)

- ✓ RPE should not be needed.
- ✓ 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.
- ✓ 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.
- ✓ Use a Type H vacuum cleaner fitted with a HEPA filter to clear up dust eg on overhead fittings.

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 SL0.

Further information

- *Respiratory protective equipment at work: A practical guide* HSG53 (Third edition) HSE Books 2005 ISBN 0 7176 2904 X
- *Control of respirable crystalline silica in quarries* HSG73 HSE Books 1992 ISBN 0 11 885680 4
- For environmental guidelines see sheet SL0

Useful links

- The Stone Federation may advise on health and safety consultants and training providers. Website: www.stone-federationgb.org.uk.
- 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

- 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.

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.