

BK1

COSHH essentials in brick and tile making: 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

- Raised dust levels result from clay drying 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.
- You need air sampling. See sheet G409.
- Health surveillance is usually needed. See sheet G404.

Clay milling (pug-mill)

Control approach 2 Engineering control

Hazard

- ✓ Brick and tile making 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

- ✓ See table in sheet BK0.

Access and premises

- ✓ Only allow access to authorised staff.
- ✓ Use CCTV to monitor the process and reduce the need for people to be there.
- ✓ Segregate this task as far as possible to reduce cross-contamination.

Equipment

- ✓ Can you use clay with a lower silica content?
- ✓ Use water spray to help suppress dust.
- ✓ Use vehicles fitted with a clean air supply to the cab. See sheet BK7.
- ✓ Keep roadways damp to help suppress dust.

Procedures

- ✓ Check that there is adequate water for dust suppression and confirm that it is working before starting work.

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.
- ✓ Clean down the equipment before starting maintenance - use wet or dustless methods.
- ✓ If the water suppression is faulty, stop work until it is repaired.
- ✓ Daily, look for signs of damage. Make repairs.
- ✓ At least once a week, check that water suppression works properly.

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- ✓ 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 if the controls work properly.
- ✓ RPE is often needed for maintenance and some cleaning jobs.
- ✓ Powered or air-fed RPE is more comfortable to wear.

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.

Health surveillance

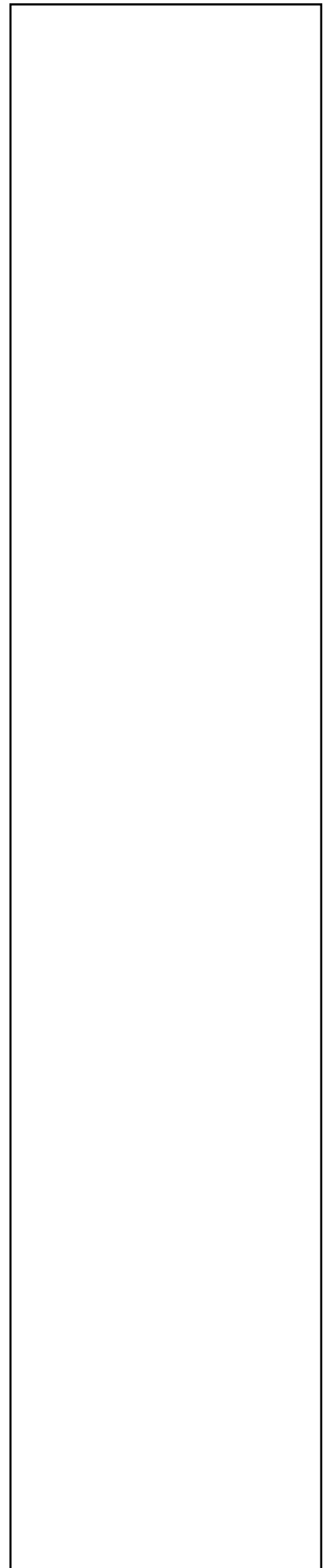
- ✓ You need health surveillance unless exposure to RCS is well below the limit. See sheet G404.
- ✓ Consult an occupational health professional - see 'Useful links'.

Cleaning and housekeeping

- ✓ 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 BK0.



Further information

- *Control of respirable silica dust in heavy clay and refractory processes* HSG72 HSE Books 1992 ISBN 0 11 885679 0
- *Health surveillance: A ceramics industry booklet* Leaflet IACL100 HSE Books 1996 (single copy free)
- For environmental guidelines see sheet BK0

Useful links

- The British Ceramics Confederation (BCC) may advise on health and safety consultants and training providers. Website: www.ceramfed.co.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 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.