

BK7

COSHH essentials in brick
and tile making: 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 and supervisors). It 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.

Ventilated vehicle cabs

Control approach 2 Engineering control

What this sheet covers

This sheet describes good practice for the control of exposure to Respirable Crystalline Silica (RCS) dust when using ventilated vehicle cabs during brick or tile manufacturing.

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.

Main points

- Brick and tile making can produce airborne RCS. High dust levels result from transferring clay in dry weather, crushing dry clay, and from ash.
- Contaminated work clothing may also be a source of dust exposure, even after the task has been completed.
- Air sampling may be needed to show that control of exposure to RCS is being maintained.
- Provide health surveillance when workers are regularly exposed to RCS dust and there is a reasonable likelihood that silicosis may develop.

Hazards

- ✓ RCS is also known as alpha-quartz, cristobalite or 'free silica', and can be wrongly labelled as 'amorphous silica'.
- ✓ RCS is hazardous by inhalation as the 'respirable' dust, which is very fine and invisible under normal lighting, can get deep into the lungs.
- ✓ The workplace exposure limit (WEL) for RCS is detailed in HSE publication [EH40/2005 Workplace Exposure Limits](#).
- ✓ Inhaling RCS can lead to:
 - Silicosis, which is a serious and irreversible lung disease that can cause permanent disablement and early death. There is an increased risk of lung cancer in workers who have silicosis.
 - Chronic obstructive pulmonary disease (COPD), which is a group of lung diseases, including bronchitis and emphysema, that results in severe breathlessness, prolonged coughing, chronic disability and can lead to death. The risk of COPD is increased by smoking.
- ✓ RCS dust is also abrasive and drying when in contact with skin, and can lead to contact dermatitis.

Access to work area

- ✓ Allow access to authorised and appropriately trained people only.

Equipment and procedures

- ✓ Use an enclosed ventilated cab fitted with filtered air intakes.
- ✓ Use high-efficiency particulate filters and pre-filters on the air intakes to stop dust getting into the cab.
- ✓ Ensure the cab door and windows are closed at all times to keep dust out.
- ✓ Use radios/CCTV/PA or suitable communication system to prevent the need for the driver to open the cab.
- ✓ Clean the cab at least once a week using at least the dust class M (medium hazard) classification vacuum cleaner.
- ✓ Ensure the ventilated cab is sealed tight by keeping door and window seals in good condition.
- ✓ Use water to clean down road surfaces and to keep vehicles clean.
- ✓ Check that there is adequate water for dust suppression and confirm that it is working before starting work.

Respiratory protective equipment (RPE)

- ✓ RPE is normally not needed.
- ✓ RPE may be needed for maintenance and cleaning.

Personal protective equipment (PPE)

- ✓ Ask your supplier to help you select the right PPE.
- ✓ Provide separate storage for clean and contaminated PPE.
- ✓ Use a contract laundry or a suitable equivalent to wash work clothing. Warn them that the dust contains silica.
- ✓ Provide coveralls that do not retain dust – synthetic rather than cotton.
- ✓ Provide protective gloves suitable for working with RCS.

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 replace skin oils.

Caution: 'Barrier creams' are not 'liquid gloves' and they do not provide a full barrier.

Maintenance, examination and testing

- ✓ Keep equipment in an effective and efficient working order. Maintain it as advised by the supplier or installer.
- ✓ Establish a plan for regular preventative maintenance.
- ✓ Clean down the equipment before starting maintenance — use wet or dustless methods.
- ✓ Check door and window seals for damage daily – repair any damage immediately.
- ✓ Check pre-filters regularly, or follow manufacturer's advice.
- ✓ Change main filters as advised by the manufacturer or when they begin to block.
- ✓ Check water suppression systems continue to work effectively.
- ✓ Get a competent person to examine the air filtration system regularly.

Cleaning and housekeeping

- ✓ Use dust-free cleaning methods (eg. wet cleaning or vacuum) as far as possible.
- ✓ Keep the inside of the cab clean – clean at least once a week using a Type M, or higher, vacuum cleaner with HEPA filter.
- ✓ Use the water wheel cleaning and keep the vehicle clean.
- ✓ Wash down metallised roadways regularly and limit vehicle speed.

Caution: Never allow the use of brushes or compressed air for removing dust from skin and clothing. Avoid the use of brushes or compressed air for removing dust from surfaces or from inside machinery.

Health surveillance

- ✓ Provide health surveillance when workers are regularly exposed to RCS dust and there is a reasonable likelihood that silicosis may develop. See sheet G404.
- ✓ Provide health surveillance for dermatitis where there is a reasonable likelihood that dermatitis may occur in your workplace. See sheet G403.

Training and supervision

- ✓ Tell workers about the hazards associated with their work and how to prevent and recognise early signs of lung damage from exposure to RCS.
- ✓ Provide workers with training on operating the equipment and using the control measures correctly, and to report any faults immediately.
- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Involve managers and supervisors in health and safety training.
- ✓ Training records are helpful to demonstrate what information, instruction and training has been provided.

Essential information

G403 – Health surveillance for occupational dermatitis

G404 - Health surveillance for those exposed to respirable crystalline silica (RCS)

G406 – New and existing engineering control systems

G409 – Exposure measurement: Air sampling

Further information

Occupational Safety and Health Consultants Register: www.oshcr.org/

COSHH Essentials sheet BK0– Table showing Crystalline Silica concentrations in common materials

Institute of Local Exhaust Ventilation Engineers: <http://www.cibse.org/>
Institute-of-Local-Exhaust-Ventilation-Engineers-I

Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV), HSG258 <http://www.hse.gov.uk/pubns/books/hsg258.htm>

Local exhaust ventilation (LEV) workplace fume and dust extraction: www.hse.gov.uk/lev/

Employee checklist

- Do you understand the health hazards associated with your work?
- Are you sure about safe work procedures?
- Are you sure how to use all dust controls?
- Check that the air filters are not heavily dust laden or blocked.
- Look for signs of wear and damage to the door and window seals.
- Close cab doors and windows.
- Switch on the cab ventilation system before setting off.
- Use the communication system in place instead of opening the door or window.
- 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.
- Clear up dust spills promptly before the dust becomes airborne.
- Wash hands before starting the job, and before eating, drinking, smoking or using the lavatory.
- Follow any skin care programme provided.

INDG 408 – *Clear the air: A simple guide to buying and using local exhaust ventilation (LEV)*

Respiratory protective equipment at work: A practical guide, HSG53 (Fourth edition), HSE Books 2013, ISBN 978 0 7176 6454 2, <http://www.hse.gov.uk/pubns/books/hsg53.htm>

Preventing contact dermatitis and urticaria at work, HSE Books, INDG233(rev2), published 07/15, Introduction, www.hse.gov.uk/pubns/indg233.pdf

Health surveillance for those exposed to respirable crystalline silica (RCS) - Guidance for occupational health professionals, Published 2015, <http://www.hse.gov.uk/pubns/priced/healthsurveillance.pdf>

You can find the full COSHH essentials series at <http://www.hse.gov.uk/coshh/essentials/index.htm>

Information on health and safety in the brick and tile manufacturing industry can be obtained from:

The British Ceramic Confederation at www.ceramfed.co.uk/

The Health and Safety Executive at <http://www.hse.gov.uk/non-metallic-minerals/heavy-clay.htm>

For information about health and safety visit <https://books.hse.gov.uk> or <http://www.hse.gov.uk>

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