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.

Access and premises

- Only allow access to authorised staff.

Equipment

- Design equipment to resist the abrasive effects of silica-containing materials.
- Can you time mineral extraction for the wetter seasons?
- Segregate the operator in a ventilated control cab. See sheet QY11.
- Provide HEPA filtered air to the control cab.
- Fit a manometer or pressure gauge to show that the clean air supply is working properly.
- Mark the acceptable range of readings.
- In dry weather, fit rippers with a mist boom mounted on the ripper/shank mechanism.
- Keep roadways damp to help suppress dust.
- Wash down metallised roadways regularly and limit vehicle speed.

Procedures

- Always confirm that the control cab air supply is turned on and working before starting work.
- Keep doors and windows closed while working.

Hazard

- Quarry 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.
- 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 QYO.

Main points

- High dust levels result from transferring minerals to the vehicle, and haulage on unmade roads in dry weather.
- 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.
Maintenance, examination and testing

- Minerals and silica-containing dusts are very abrasive. Plan regular maintenance.
- Use a written system of work - define what personal protective equipment (PPE) is needed for maintenance.
- Follow instructions in maintenance manuals - keep equipment in effective and efficient working order.
- For control cabins and cabs, see sheet QY11
- Daily, look for signs of damage. Make repairs.
- Check any air conditioning self-test every time the machine is started.
- Change inlet air HEPA filters after 250 hours’ use, or as advised by the manufacturer.
- You need to know the manufacturer’s performance specifications to know if the equipment is working properly.
- If this information isn’t available, hire a competent ventilation engineer to determine the performance needed for effective control.
- The engineer’s report must show the target ventilation rates.
- Keep this information in your testing log-book.
- 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 work near the equipment while running, and for maintenance and cleaning jobs.
- 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 40. See sheets R4 and R5.
- 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.
- Keep RPE clean.

Other protective equipment

- Provide clean, dust-resistant coveralls.
  
  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**
- See sheet QY11 for cabins and cabs.
- Clean the control cabin at least once a week. Fine dust on internal surfaces suggests poor control.
- Use a Type H vacuum cleaner fitted with a HEPA filter, or wet clean. Caution: Don’t use a brush or compressed air.

**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 QY0.

**Further information**
- *Respiratory protective equipment at work: A practical guide*  
- *Control of respirable crystalline silica in quarries* HSG73 HSE Books 1992 ISBN 0 11 885680 4
- For environmental guidelines see sheet QY0

**Useful links**
- Your Trade Association may advise on health and safety consultants and training providers. For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit 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 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.

This document is available at: www.hse.gov.uk/pubns/guidance/ and www.hse.gov.uk/coshh/essentials/

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**Employee checklist**
- Are you sure how to use all dust controls?
- Is the cab clean air supply working? Are the windows shut?
- Check that the filter seating is in good condition.
- Keep the cab interior clean.
- 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.

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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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