

QY10

COSHH essentials in quarries: 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 useful for trade union safety representatives and helps with the Quarries Regulations 1999. See sheet QY0.

This sheet describes good practice using RPE and dust extraction.

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

- Use only vacuum or wet cleaning.
- Clouds of dust result from disturbing settled fine dusts and cleaning overhead.
- 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.

Cleaning up silica dusts

Control approach R

Respiratory protective equipment (RPE)

Hazard

- ✓ When all controls are applied properly, less than 0.1 mg/m³ respirable crystalline silica is usually achievable (based on an 8-hour time-weighted average).

Crystalline silica concentrations in common materials

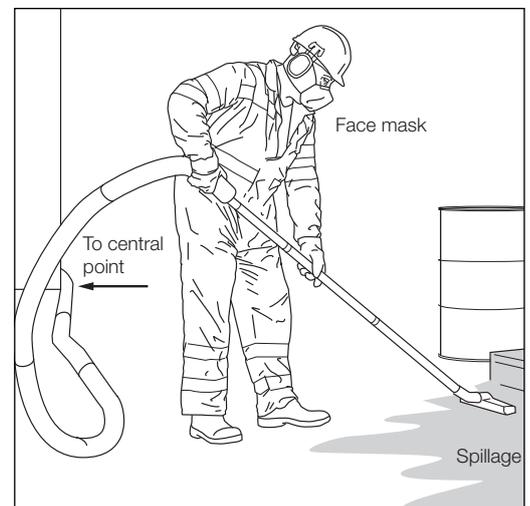
- ✓ See table in sheet QY0.

Access and premises

- ✓ Only allow access to authorised staff.
- ✓ Floors should slope gently towards gulleys, to help dust removal by wet washing.
- ✓ Protect electrical installations from water ingress.

Equipment

- ✓ Design equipment to resist the abrasive effects of silica-containing materials.
 - ✓ RPE is normally needed to reduce exposures to an acceptable level.
 - ✓ Fit an integrated vacuum cleaning system with multiple connections to a central dust collector.
 - ✓ Fit a manometer or pressure gauge near the extraction point, to show that the system is working properly.
 - ✓ Mark the acceptable range of readings.
 - ✓ Fit an indicator or alarm to show if filters have blocked or failed.
- Caution: Vacuuming methods are unsuitable for bulk spillages of dry powder - wet these with a fine mist and shovel away.**



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.

-
- ✓ Maintain all respiratory protective equipment (RPE) in effective and efficient working order.
 - ✓ Keep airline oil and water traps empty, and filters clean.
 - ✓ Make sure that users examine their RPE thoroughly and test it works properly every time they use it.
 - ✓ Daily, look for signs of damage, eg to ducts and seals. Make repairs.
 - ✓ You need to keep all controls in good working order. See sheet G406 for advice on engineering controls.
 - ✓ You need to know the manufacturer's performance specifications to know if the equipment is working properly.
 - ✓ 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.
 - ✓ 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 is normally needed.
- ✓ 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.
- ✓ Train workers to 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.

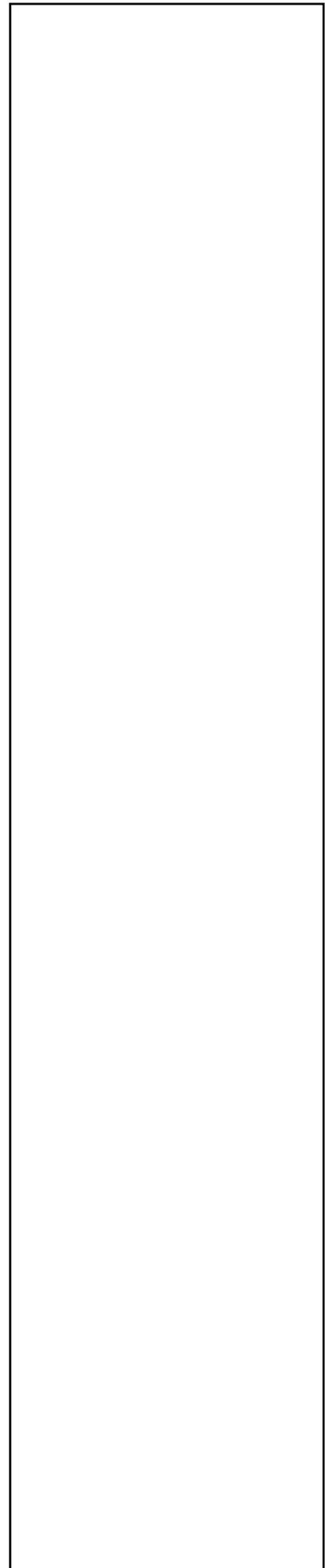
Caution: Never allow use of compressed air for removing dust from clothing.

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'.

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

- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *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 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/

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

© Crown copyright If you wish to reuse this information visit www.hse.gov.uk/copyright.htm for details. First published 10/06

Employee checklist

- Are you sure how to use all dust controls?
- Check your RPE works properly every time you use it.
- Is the dust extraction working? Check the gauge.
- 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.