

QY11

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.

This sheet describes good practice using control cabins or vehicle cabs with forced filtration.

This sheet does not apply to underground working.

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.

Control cabins and vehicle cabs

Control approach 2 Engineering control

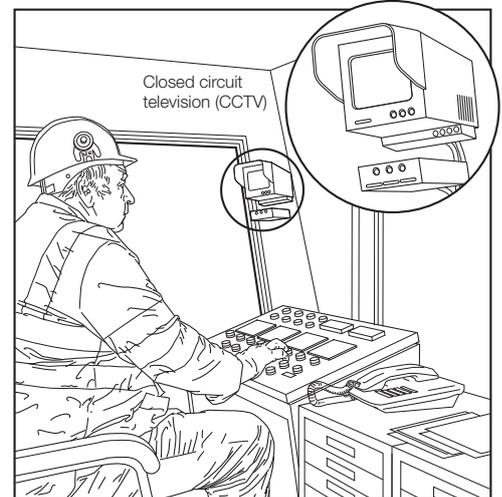
Hazard

- ✓ 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.

Control cabins with forced filtration

- ✓ Consult a qualified ventilation engineer to assure that the design will cope with the anticipated dust levels. The design should cover the following points:

- pre-filters, to protect the main filter if coarse silica dusts are present;
- HEPA filters (BSEN 1822):
 - type H11 for external RCS concentrations below 1 mg/m³;
 - type H12 or H13 for external RCS concentrations above 1 mg/m³;
- pressure gauges to show the system is working properly;
- alarms to sound when filters clog;
- overpressure around 10 Pa inside the cabin to prevent dusty air ingress;
- flaps to release excess pressure;
- door seals - heavy-duty neoprene or other suitable material; and
- self-closing doors.



Using control cabins

- ✓ Abrasive dusts can wear out equipment quickly. Plan regular checks and maintenance of the critical parts.
- ✓ Check that the clean air supply is turned on and working at the start of work
- ✓ Check pre-filters regularly - keep spares
- ✓ Check integrity of filter seals daily if they are accessible. If they are not, check monthly and carry out a smoke test at the mid-point of the month.

- ✓ Change inlet air HEPA filters as advised by the manufacturer, but at least after every 250 hours' use.
- ✓ Keep doors and windows closed.
- ✓ Reduce dust being trailed in - use sticky mats or overshoes.
- ✓ Clean the control cabin at least once a week. Use a Type H vacuum cleaner fitted with a HEPA filter, or wet clean.
- ✓ Define and provide personal protective equipment (PPE) for work outside the cabin.

Don't clean up with a brush or with compressed air.

Maintenance, examination and testing

- ✓ Get a competent ventilation engineer to examine the system thoroughly and test its performance at least once every 14 months. See the HSE publication HSG54 - see 'Further information'.
- ✓ 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.

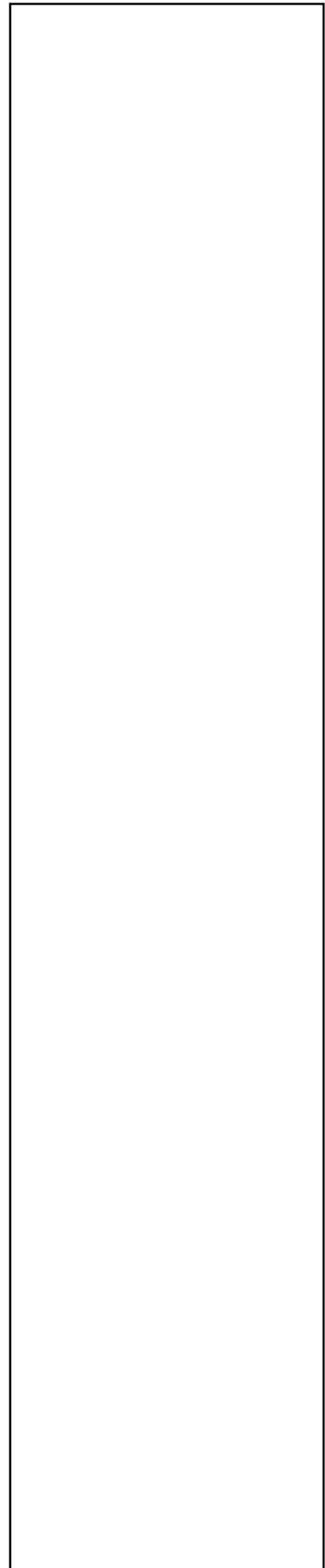
Vehicle cabs with forced filtration

- ✓ High dust levels result from transferring material to the vehicle and haulage on unmade roads in dry weather.
- ✓ Can you time mineral extraction for the wetter seasons?
- ✓ Wash down metalled roadways regularly and limit vehicle speed.
- ✓ The cab should have the following features:
 - pre-filter to protect the main HEPA filter;
 - pressure gauge to show the system is working properly;
 - overpressure around 10 Pa inside the cab to prevent dusty air ingress; and
 - door and window seals - heavy-duty neoprene or other suitable material.

Using cabs with filtered air

- ✓ Abrasive dusts can wear out equipment quickly. Plan regular checks and maintenance of the critical parts.
- ✓ Check that the control cab clean air supply is turned on and working at the start of work.
- ✓ Check pre-filters regularly - keep spares.
- ✓ Change inlet air HEPA filters as advised by the manufacturer, but at least after every 250 hours' use.
- ✓ Keep doors and windows closed.
- ✓ Check any air conditioning self-test every time the machine is started.
- ✓ Vacuum clean the vehicle cab at least once a week. Use a Type H vacuum cleaner fitted with a HEPA filter.

Caution: Don't clean up with a brush or with compressed air.



Maintenance, examination and testing

- ✓ Get a competent ventilation engineer to examine the system thoroughly and test its performance at least once every 14 months. See the HSE publication HSG54 - see 'Further information'.
- ✓ 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.

Further information

- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- British Standards can be obtained in PDF or hard copy formats from BSI: <http://shop.bsigroup.com> or by contacting BSI Customer Services for hard copies only Tel: 020 8996 9001 email: cservices@bsigroup.com.
- 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.

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