Manual dehacking and batching

Control approach R
Respiratory protective equipment (RPE)

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).

Crystaline silica concentrations in common materials
✓ See table in sheet BK0.

Access and premises
✓ Only allow access to authorised staff.
✓ Provide good access to enable safe waste removal.

Equipment
✓ Respiratory protective equipment (RPE) is normally needed to reduce exposures to an acceptable level.
✓ Can you use automated systems?
✓ Can you de-dust bricks with compressed air in an extracted chamber? Or use water suppression?
✓ Use local air displacement - see illustration. The inlet air must be clean.
✓ You need a downward air speed between 1 and 1.5 metres per second around workers’ breathing zones.
✓ Make sure that draughts do not interfere with the air flow.
✓ Fit a manometer or pressure gauge to show that the clean air supply is working properly.
✓ Fit an indicator or alarm to show if filters have blocked or failed.
✓ Consult HSL on new system designs. See ‘Useful links’
Procedures
✓ Always confirm that the clean air supply is turned on and working at the start of work.
✓ Make sure you can get spares easily.

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 filtered air supply is faulty, stop work until it is repaired.
✓ Daily, look for signs of damage. Make repairs.
✓ At least once a week, check that air filtration works properly. Check the gauge.
✓ 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.
✓ Keep this information in your testing log-book.
✓ 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’.
✓ Examine and test RPE thoroughly at least once every three months.
✓ 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 safety equipment supplier to help you get the right PPE.
✓ Provide storage for clean and contaminated PPE.

Respiratory protective equipment (RPE)
✓ RPE is normally needed.
✓ RPE is often needed for maintenance and some 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 10. See sheet R2.
✓ Disposable RPE is acceptable.
✓ 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. Throw away disposable RPE at the end of the job or the end of the shift.
✓ Keep RPE clean.
Other protective equipment
✓ Provide coveralls that do not retain dust. Use synthetic fabrics - not cotton or knitted.
✓ Use a contract laundry or a suitable equivalent to wash work clothing. Warn them that the dust contains silica.
✓ 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
✓ Clean the machinery and workroom at least once a week.
✓ Use procedural controls (eg lock-off) before cleaning.
✓ Use a Type H vacuum cleaner fitted with a HEPA filter to clear up dust eg. on overhead fittings.
Caution: Don’t clean up with 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 BK0.

Further information
- Maintenance, examination and testing of local exhaust ventilation
- Respiratory protective equipment at work: A practical guide
- 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)
- Permit-to-work systems
  Leaflet INDG98(rev3) HSE Books 1997 (single copy free or priced packs of 15 ISBN 0 7176 1331 3)
- For environmental guidelines see sheet SL0
Useful links

- The British Ceramics Confederation (BCC) may advise on health and safety consultants and training providers. Website: www.ceramfed.co.uk
- For details of local air displacement controls contact the Health and Safety Laboratory (HSL) Tel: 01298 21 8000 e-mail hslinfo@hsl.gov.uk.
- 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.

Employee checklist

- Are you sure how to use all dust controls?
- Is the equipment switched off and locked off for maintenance and cleaning?
- Check your RPE works properly every time you use it.
- 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 document is available at: www.hse.gov.uk/pubns/guidance/ and www.hse.gov.uk/coshh/essentials/