ST0

Advice for managers

COSHH essentials for stone workers: 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

Introduction

The Control of Substances Hazardous to Health Regulations (COSHH) requires employers to assess and control health risks from the substances they deal with. The Health and Safety Executive has produced these advice sheets to help employers achieve this. For some common tasks, the sheets take account of the health hazard (and exposure potential) of substances used or produced to identify an approach appropriate to control the risks from Respirable Crystalline Silica (RCS) generated during the working of stone in the stone manufacturing and construction industries.

The approximate content of crystalline silica in some common types of stone and other materials is given in the table below.

Sandstone, gritstone, quartzite	above 70%
Artificial stone *	up to 95% (but depends on the type of stone pieces or minerals used in its production)
Mortar, concrete	25 to 70%
Shale	40 to 60%
China stone	up to 50%
Granite	20 to 45% (typically 30%)
Slate	20 to 40%
Ironstone	up to 15%
Basalt, dolerite	up to 5%
Limestone, chalk	up to 5% (typically less than 2%)
Marble	up to 5% (but can contain layers of crystalline silica so overall content may be a lot higher)

* Artificial stone may also be known as agglomerated stone and includes engineered stone, sintered stone and terrazzo.

The working of stone, including processes such as cutting, chiselling and polishing, can generate high levels of stone dust containing RCS.

For slate, the splitting, separation, closing and stacking of slates can create local jets of fine dust, whilst sawing and dressing creates both fine and coarser dust containing RCS.

Resuspension of dust containing RCS from surfaces is also a contributory source of exposure, so cleaning and housekeeping are important.

What the sheets cover

The ST series of sheets (listed below) describes good practice for the control of exposure to RCS from stone working within the stone manufacturing and construction industries. As slate is just one type

of stone, there is no longer a justification to have a separate series of sheets for slate. The whole slate series (SL series) has been withdrawn and relevant information included in the ST series.

ST1	Primary and secondary sawing
ST2	Automated boring and polishing using rotary tools
ST3	Cutting and polishing using hand-held rotary tools
ST4	Hand and pneumatic chiselling
ST5	Sawing slate
ST6	Slate splitting
ST7	Dressing slate

Reducing exposure to an adequate level always involves a mixture of equipment and ways of working. This means employers should:

- Choose the most effective and reliable control measures
- Ensure they are used properly by instructing, training and supervising workers
- Ensure the control measures keep on working by regular maintenance
- Check and review all elements of control measures regularly for their continued effectiveness.

Each sheet gives advice on how to achieve this for a particular task.

Hazards

✓ RCS is also known as alpha-quartz, cristobalite or ‘free silica’, and can be wrongly labelled as ‘amorphous silica’. All 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 for RCS is detailed in HSE publication EH40/2005 Workplace Exposure Limits: www.hse.gov.uk/pubns/priced/eh40.pdf.

✓ 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.

✓ Dried slurry can, if disturbed, produce airborne dust which may be hazardous by inhalation.

How to use the sheets

✓ Consider the processes/tasks and hazardous substances in your workplace.

✓ Look for opportunities to substitute stones with ones containing less crystalline silica, to reduce manual working by automation, and limit use of hand power tools to lower the likelihood of worker exposure.

✓ Examine the advice sheets for each of the tasks.

✓ Examine the essential information sheets listed on each advice sheet.

- ✓ Compare operations in your workplace with recommendations in the advice sheets for all of the relevant tasks.
- ✓ Document findings (this forms part of your risk assessment).
- ✓ Document any actions you need to take, covering issues identified, planned actions, target completion date, person responsible, status of issue and review of effectiveness.
- ✓ Keep these documents as a written record of your actions to prevent exposure of workers to hazardous substances.

If you are in doubt, seek expert help. You may have to change old working practices or implement new controls. Decide how best to make any changes required 'across the board'.

Further information

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

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

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

Respiratory protective equipment at work – A practical guide, HSG53,
http://www.hse.gov.uk/pubns/books/hsg53.htm

G-series: General Guidance COSHH Essentials sheets at http://www.hse.gov.uk/pubns/guidance/gseries.htm

Including:

G401 – Health monitoring for chronic obstructive pulmonary disease.

G403 – Health surveillance for occupational contact dermatitis (OCD).

G404 – Health surveillance for silicosis.

G406 – New and existing engineering control systems.

G409 – Exposure measurement: Air sampling.

Information on health and safety for stone working in the stone manufacturing and construction industries can be obtained from:

The Health and Safety Executive at http://www.hse.gov.uk/stonemasonry/index.htm

Stone Federation at http://www.stonefed.org.uk/

Quarry Partnership Team (QPT) at http://www.safequarry.com/qpt.aspx

Construction Dust Partnership (CDP) at http://www.citb.co.uk/health-safety-and-other-topics/health-safety/construction-dust-partnership/

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

To report inconsistencies or inaccuracies in this guidance email: commissioning@wlt.com.