BREATHE FREELY

Controlling Exposures to prevent occupational lung disease in the construction industry

Floor/Wall Tiler

HAZARDS AND RISKS

The biggest risks to a tiler's respiratory health are likely to be from hazardous dusts generated by tasks such as cutting and grinding wall and floor tiles, mixing granite, terrazzo, synthetic resin or other composition mixtures, and cleaning floor surfaces.

Construction dust

Construction dust is a general term and includes dust from soil and building materials. Breathing in any dust can (over time) cause serious lung disease such as chronic obstructive pulmonary disease (COPD) which includes chronic bronchitis and emphysema. There are also dusts, such as silica dust or wood dust, that can cause specific serious lung diseases.

Silica Dust/ Respirable crystalline silica (RCS)

Silica is present in large amounts in most rocks, sand and clay, and in products such as granite and concrete. Some silica dust is fine enough to be breathed deeply into the lungs; this is called respirable crystalline silica (RCS). Exposure to RCS over many years, or in extremely high doses, can lead to serious lung diseases, including fibrosis, silicosis, COPD and lung cancer. These diseases cause permanent disability and early death: over 500 construction workers die every year from exposure to silica dust.

Tiles are typically set in mortar and the gaps between tiles filled with grout. These are silica containing materials.

Resins, solvents and adhesives

Tiling workers can be exposed to these substances which may cause ill-health effects such as headaches, dizziness, irritation to the skin, eyes, lungs and throat, and asthma (depending on the specific substance handled). The safety data sheet (SDS) for the product(s) in use should be reviewed.

CONTROL OPTIONS

Elimination/prevention

- Eliminate tile cutting by using pre-cut tiles delivered to site wherever possible.

Safe working methods

- Choose work methods that avoid or limit cutting, grinding, drilling, chiselling or abrasion of silica containing materials wherever practicable.
- Eliminate or minimise dust creation through wet working, eg; use water suppression for cutting or drilling stone and concrete products, damp down the work area beforehand and damp down dust during cleaning. Where tile resizing is needed, use water to stop the release of dust into the air (note: modern cut-off saws should have an attachment for a water hose).
- Keep workers away from dust sources unless they are directly involved in the task.
- Ensure good general ventilation wherever possible.

MANAGING THE RISK

Training & communication, supervision, maintenance & testing of controls and **air monitoring*** are all vital aspects of managing the risk, in addition to health surveillance which can be a requirement in certain circumstances.

See our introductory *Respiratory Health Hazards in Construction Fact Sheet Series:* ***Overview*** for more information about what things to consider and implement.

Air monitoring*

Air monitoring is a specialist activity. It may be needed as part of a COSHH assessment, as a periodic check on control effectiveness and to assess compliance with relevant WELs, or where there has been a failure in a control (for example if a worker reports respiratory symptoms). A qualified Occupational Hygienist can ensure it is carried out in a way that provides meaningful and helpful results.

The decision to undertake exposure monitoring should be made in accordance with HSE's monitoring strategies outlined in HSG173. In some situation, qualitative or semi-quantitative methods may be suitable. See also COSHH regulation 10 ACOP which details when exposure monitoring is necessary or unnecessary.

Also, see HSE leaflet G409,
Exposure measurement: Air sampling.
www.hse.gov.uk/pubns/guidance/g409.pdf

See reverse for Workplace Exposure Limits (WELs) →

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WORKPLACE EXPOSURE LIMITS (WELs) & EXPOSURE LEVELS

Agent or substance	Control/Exposure Limit	Exposure Levels
Silica - RCS	0.1 mg/m^3 (8 hr TWA).	Exposure is dependent on the silica content of the material being worked, which varies – with sandstone (70-90%) and concrete (anything from 25-75%) typically containing the most, granite, slate and brick at around 30%, and limestone and marble (2%) the least. Grinding and cutting without water suppression is likely to produce the highest levels of stone dust, and risk of exposure to RCS is also affected by the frequency and duration of the work. All Party Parliamentary Group for Respiratory Health (which is an informal, cross-party group formed by MPs and Members of the House of Lords) published a report named "Silica- the next asbestos". This recommends that the WEL for RCS is reduced to 0.05 mg.m-3 as this would be in line with the recommended exposure standard from the Scientific Committee on Occupational Exposure Limits proposed in 2003.
Construction Dust		These levels are not workplace exposure limit but the level at which the dust becomes defined as a 'hazardous substance' and so it subject to the COSHH regulations. This does not apply to substances listed in Table 3.2 of part 3 of Annex VI of the CLP Regulation, substances specified with an indication of danger e.g. very toxic, toxic, harmful, corrosive or irritant, or substances for which the HSE has an approved WEL.

Further information

- COSHH Essentials guidance sheet on how to control exposure to hazards in construction: *www.hse.gov.uk/pubns/guidance/cnseries.htm*
- COSHH Essentials: Health surveillance for those exposed to respirable crystalline silica (RCS): *www.hse.gov.uk/pubns/guidance/g404.pdf*
- Silica dust: *www.hse.gov.uk/construction/healthrisks/cancer-and-construction/silica-dust.htm*
- Construction dust leaflet: *www.hse.gov.uk/pubns/cis36.pdf*