

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 bricks, concrete and mortar. Some of the dust created by demolition activities 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. RCS is classified as a Group 1 carcinogen and is a definite cause of cancer in humans. These diseases cause permanent disability and early death and it is estimated that about 5 million people in the EU are exposed to RCS. The WHO* and the ILO* estimate that approximately 30 people die annually in Ireland from occupational exposure to respirable crystalline silica (RCS).

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.

**The WHO is the World Health Organisation and the ILO is the International Labour Organisation. They are both United Nations agencies.*

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, e.g., use water suppression for cutting or drilling stone and concrete products, dampen down the work area beforehand and dampen 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.

PPE

- Use respiratory protective equipment (RPE) with an APF protection rating of 20 or higher depending on the location, duration and type of work. Consider powered RPE for longer duration work. Operators wearing tight-fitting RPE must be clean shaven and fit-tested.
- Disposable dust masks (FFP3) may be acceptable for outdoor work but must be fit-tested.

MANAGING THE RISK

Training & communication

Supervision, maintenance and 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.

Air monitoring

Air monitoring is a specialist activity. It may be required as a result of a chemical agents risk assessment, as a periodic check on control effectiveness and to assess compliance with relevant Occupational Exposure Limit Values (OELVs), 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.

Refer to the current Health and Safety Authority's 'Code of Practice' for relevant OELVs.

To obtain the most accurate and up-to-date information, it is recommended to visit the Health and Safety Authority (HSA) website or contact the HSA directly. The website may have the latest versions of the relevant code of practice, guidelines, and regulations.

<https://www.hsa.ie>

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OCCUPATIONAL EXPOSURE LIMIT VALUES (OELVs) & EXPOSURE LEVELS

Agent or substance	Control/Exposure Limit	Exposure Levels/Comments
Construction Dust		These levels are advisory occupational limits only and the level which the dust becomes defined as a 'hazardous substance' and is then subject to the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001 to 2021.
Total inhalable	10 mg/m ³ (8-hr reference period)	
Respirable	4 mg/m ³ (8-hour reference period)	
Silica - RCS	0.1 mg/m ³ (8-hour reference period).	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.

Further information

[Safety, Health and Welfare at Work \(Chemical Agents\) Regulations, 2001. S.I. No. 619/2001, as amended 2015, 2021.](#)

[Safety, Health and Welfare at Work \(Carcinogens, Mutagens & Reprotoxic Substances\) Regulations, 2024](#)

[Current Code of Practice for the Safety, Health and Welfare at Work \(Chemical Agents\) Regulations, 2001 as amended, and the Safety, Health and Welfare at Work \(Carcinogens, Mutagens & Reprotoxic Substances\) Regulations, 2024.](#)

[Control of Chemical Agents: Your Steps to chemical safety.](#)

[Guidelines on Occupational Asthma. Health and Safety Authority.](#)

[Guidelines on Occupational Dermatitis. Health and Safety Authority.](#)