

Dust, Silica and COSHH

The biggest health risk on most sites · and the one with the least paperwork behind it

Cutting, grinding, drilling, chasing and sweeping all produce dust. Where the material contains silica — concrete, mortar, brick, block, stone, sand — the fine fraction that you cannot see is respirable crystalline silica, and it causes silicosis, chronic obstructive pulmonary disease and lung cancer. The damage is permanent and it is entirely preventable.

Scope and limitations — read before use

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1. The number to know

Substance	Workplace exposure limit	Source
Respirable crystalline silica (RCS)	0.1 mg/m ³ as an 8-hour time-weighted average	HSE EH40 Workplace exposure limits
Respirable dust (general)	4 mg/m ³ 8-hour TWA	HSE EH40
Inhalable dust (general)	10 mg/m ³ 8-hour TWA	HSE EH40

To put 0.1 mg/m³ in perspective: it is roughly the amount of dust that would sit on a small coin, spread through the air you breathe over a whole shift. A few minutes of dry cutting with a disc cutter can put a worker over the limit for the entire day.

2. The hierarchy of control under COSHH

Order	Control	On site this means
1	Eliminate or substitute	Order materials cut to size. Use a block splitter instead of a disc cutter. Choose a lower-silica product where one exists.
2	Engineering control — water suppression	On-tool water feed at the point of cutting, with enough water and kept running. Not a bucket splashed on afterwards.
3	Engineering control — on-tool extraction	An M or H class extraction unit fitted to the tool, with the right shroud and filters maintained.

4	Ways of working	Cut outside rather than inside. Keep others out of the area. Rotate tasks. Never dry sweep — vacuum or damp down.
5	RPE as the last line	Correctly specified, face-fit tested, worn properly, and clean shaven. RPE is never the first answer.

Two failures cover most enforcement: dry cutting with no water or extraction, and RPE that has never been face-fit tested being worn over a beard.

3. RPE — getting it right

- Specify by assigned protection factor for the job. For most silica work an FFP3 disposable or a reusable half mask with P3 filters is the minimum starting point.
- Face-fit testing is required for tight-fitting masks, by a competent tester, and it must be recorded. A mask that does not seal does nothing.
- Facial hair at the seal breaks the fit. If a worker will not shave, they need a powered hood or visor that does not rely on a face seal.
- Disposable masks are single shift. Reusable masks need cleaning, storage and filter changes on a schedule.
- Wearers need training on fitting and checking the seal every time.

4. COSHH risk assessment — dust

Task	Material	Dust type	Controls in place	Adequate? Y/N	RPE required	Action
Cutting kerbs, slabs or blocks	Concrete, stone	RCS				
Chasing walls for cables or pipes	Brick, block, mortar	RCS				
Drilling concrete or masonry	Concrete	RCS				
Grinding or scabbling concrete	Concrete	RCS				
Cutting paving or block paving	Concrete, stone	RCS				
Breaking out concrete or screed	Concrete	RCS				
Mixing cement, mortar or grout	Cement	Cement dust, RCS				
Sanding plaster or filler	Plaster	Nuisance and respirable dust				
Cutting fibre cement sheet	Fibre cement	RCS (and possible asbestos in old sheets)				
Sweeping up debris	Mixed	RCS				
Cutting or sanding timber	Wood	Hardwood or softwood dust (hardwood is a carcinogen)				

Cutting or drilling MDF	MDF	Wood dust and resin				
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5. Health surveillance for dust

Where the COSHH assessment shows exposure to silica or other respiratory hazards, health surveillance is required. Typically a respiratory questionnaire on appointment and at intervals, with lung function testing where indicated. Records kept 40 years.

Name	Role	Exposure identified	Baseline done	Next due	Outcome / referral

Assessed by	Signature	Date	Review date