Construction Dust: The Slow Killer on Site (and How to Stop It)

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The Hazard You Cannot See Settling

Falls kill construction workers quickly and visibly. Dust kills them slowly and invisibly, years or even decades after the exposure, through diseases including silicosis, chronic obstructive pulmonary disease, occupational asthma and lung cancer. The most dangerous fraction is the part you cannot see: respirable particles fine enough to bypass the body's natural defences and lodge deep in the lungs, where the damage lasts for life.

All of the dusts described below fall under the Control of Substances Hazardous to Health Regulations 2002 (COSHH). That means a suitable and sufficient risk assessment, control of exposure at source, and in many cases monitoring and health surveillance are legal duties, not optional good practice. On a construction site, every employer has COSHH duties for their own workers, and under the Construction (Design and Management) Regulations 2015 the principal contractor must make sure the arrangements are reflected in the construction phase plan.

The Three Dusts That Matter Most

Respirable crystalline silica (RCS) is released whenever concrete, mortar, brick, stone, tile or engineered stone is cut, ground, drilled or broken. The workplace exposure limit is extremely low, 0.1 mg/m3 averaged over eight hours. Because the limit is so low and the work so common, silica is the dust most likely to cause serious long-term harm on a typical site.

Wood dust comes from sawing, routing and sanding timber and board products. Hardwood dust is linked to a rare but serious nasal cancer, and both hardwood and softwood dusts are recognised causes of occupational asthma. General construction dust, from plasterboard, insulation, demolition debris and mixed waste, is generally less harmful than silica or wood dust, but in demolition and strip-out quantities it is far from harmless, and it often contains silica from masonry mixed in.

- **RCS:** cutting, grinding, drilling or breaking concrete, mortar, brick, stone and engineered stone worktops
- **Wood dust:** sawing, routing and sanding hardwood and softwood, including MDF and chipboard
- **General dust:** plasterboard cutting, insulation handling, demolition and strip-out

What a Compliant Dust Control Arrangement Looks Like

The law requires control at source first, and respiratory protective equipment (RPE) last, not first. A genuinely compliant arrangement on a construction site in Leicestershire or anywhere else starts with design: ordering blocks and slabs cut to size off-site, using block splitters instead of cut-off saws where the finish allows, and choosing fixing methods that avoid repeated drilling.

Where cutting, grinding or drilling cannot be designed out, water suppression and on-tool extraction are the next line of defence. Cut-off saws need a constant water feed for the entire cut, so check that bottles are filled and connected before work starts. Grinders, sanders and drills should be fitted with on-tool extraction connected to an M-class (or higher) extraction unit; a domestic vacuum or a site hoover rated for general debris is not adequate.

Housekeeping closes the gap between tasks: vacuum rather than sweep, and never use compressed air to clean down tools, clothing or surfaces. Dry sweeping and compressed air both relaunch settled dust into the air at breathing height.

- Order pre-cut materials and avoid on-site cutting wherever practical
- Use water-fed cut-off saws with the flow checked before every task
- Fit M-class on-tool extraction to grinders, sanders and drills
- Vacuum dust and debris; never dry sweep or use compressed air

RPE as the Last Line of Defence, Not the First

Even with good engineering controls, many dusty tasks still need RPE as a final layer of protection. For most construction dust work that means a disposable FFP3 respirator or a half mask fitted with P3 filters. Two things decide whether RPE works in practice: fit and wear time.

The first is fit. Tight-fitting respirators have to be matched to the individual wearer's face through face fit testing, and the wearer must be clean-shaven where the mask seal meets the skin. A day's stubble can be enough to break the seal and seriously weaken the protection. Fit testing should be repeated whenever the mask model or size changes, and as a minimum whenever a wearer's facial shape changes significantly, for example after major weight loss, dental work or facial injury.

The second is wear time. A mask pulled down for a conversation, a phone call or because it is uncomfortable in the heat loses a large share of its daily protective value. Comfortable, correctly sized masks, and an explanation of why they matter, do more for compliance than simply issuing one and moving on.

Health Surveillance and Who Is Responsible

Where workers are regularly exposed to silica or wood dust despite the controls in place, health surveillance is often required under COSHH, typically questionnaires and lung function testing arranged through an occupational health provider. It will not protect an individual by itself, but it catches early signs of disease and tells an employer whether controls that look good on paper are actually working in practice.

Responsibility is shared but not equal. The employer carries the primary legal duty under COSHH to assess the risk, provide the right controls and equipment, and arrange surveillance where needed. Site managers and supervisors are responsible for making sure the controls specified are actually used day to day, not just issued once. Individual workers have a duty to use the equipment provided correctly and to report defects, discomfort or symptoms, but that only works if the equipment and training are adequate.

What Commonly Goes Wrong and the Records You Need

A common failure is not a missing risk assessment but a gap between the paperwork and the tool actually in someone's hands on a Tuesday afternoon. Water bottles run dry and nobody refills them. Extraction units are present but switched off because they slow the job down. Fit tests are done once at induction and never repeated when the mask brand changes. Beards grow back between tests. Each is small, but together they add up to real exposure.

A COSHH risk assessment for dust-generating work should be reviewed regularly, and sooner if the work method, materials or tools change, or if health surveillance flags a concern. Records worth keeping include the COSHH assessment itself, face fit test certificates for each wearer and each mask model used, maintenance and examination records for extraction equipment, and health surveillance outcomes held confidentially by the occupational health provider. They show what controls were in place if a worker develops ill health years later.

- Review COSHH dust risk assessments regularly and after any change in method
- Keep face fit test certificates for every wearer and every mask model
- Log extraction equipment checks and servicing
- Retain health surveillance records through the occupational health provider

Getting It Right on Your Sites

Dust control is a chain of small habits: the right method chosen at the planning stage, the right tool fitted with water or extraction, the right mask fitted to the right face and actually worn. Break any one link and exposure happens anyway, even when every piece of paperwork looks complete. For

contractors working across construction sites in the East Midlands, that chain needs checking regularly, not assuming.

Integral Safety supports construction employers with COSHH and dust risk assessments through our health and safety consultancy service, face fit testing for RPE wearers, and our COSHH Awareness course for site teams. We work with contractors across the East Midlands, from Coalville out to Leicester, Loughborough, Derby and Nottingham. Contact us to get ahead of the dust on your next project.

Talk to Integral Safety Ltd

We are health and safety consultants based in Coalville, Leicestershire, working with businesses across the East Midlands. If anything in this guide applies to your workplace, we can help.

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This guide is general information about UK health and safety law and practice, correct as at 11 November 2026. It is not advice on your particular circumstances. The latest version is at https://integralsafetyltd.co.uk/blog/construction-dust-controlling-silica-and-wood-dust-on-site.