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A HANDFUL

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OF DUST

The mortal danger to construction workers from silica dust is getting worse. **Ian Weinfass** investigates

Stonemason Stuart Johnson would come home from work “absolutely covered in dust”, his wife Carol recalls. “It was just part and parcel of the job.”

Stuart was unaware that the dust he was inhaling – silica – could lead to silicosis, a dangerous lung disease. In 2019, he became one of an estimated 500 UK construction workers to die of silicosis each year.

In the years leading up to his death, Stuart had been struggling to breathe at times and had been diagnosed with chronic obstructive pulmonary disease. In February 2017, he collapsed at work and was never again well enough to return. He was 61 when he stopped working, having previously been super fit and outgoing.

“He was breathless all the time, he’d get absolutely exhausted, he lost his

appetite... over 18 months he became another person – he became an old man,” Carol says.

With a mortgage to pay and neither of them working, the couple were forced to sell their home and move to a smaller one. Carol spent a year and a half caring for her partner of three decades before he died. He deteriorated quickly. A few days before he passed away, Stuart asked Carol if she would speak out to help spread awareness of the risks of working with silica.

Since Stuart’s untimely death, the silicosis threat has intensified. Workers are being exposed to even higher levels of silica dust through the use of artificial stone, a popular new material, leading them to contract silicosis faster and at a younger age than ever before. But what can be done to stop more people dying from silicosis, and is this new threat being taken seriously enough?



Irreversible damage

Silicosis is an irreversible condition caused by inhaling crystalline silica dust over many years. It causes the lungs to swell and then harden, stopping them functioning properly. The Health and Safety Executive (HSE) describes silica dust as the second-biggest risk to construction workers after asbestos.

One study found that between 1996 and 2017, the average age of those receiving a diagnosis in the UK was 61, and men made up 98 per cent of all cases. One in six diagnoses was given to a person aged under 46.

Silica dust, also known as silicon dioxide, is a chemical compound made of silicon and oxygen found in sand, soil, stone, concrete and mortar, as well as bricks, tiles and glass. People who cut, drill, grind or polish these materials are at risk of breathing in crystalline silica dust. Stuart Johnson worked with delph, a reclaimed Yorkshire sandstone with a very high silica content. He used to cut it with a power saw and rock drills, before dressing it with a hammer and chisel.

While not usually fatal on its own, silicosis increases the risk of contracting other deadly conditions including tuberculosis, lung cancer, heart failure and kidney disease. Stuart Johnson ultimately died of pneumonia, accelerated by his silicosis.

Carol says Stuart was like a skeleton before

he died. He had come close to death three times before he deteriorated for the final time, declining further treatment in order to maintain awareness of his wife and children. "It's a horrible disease, it totally wrecks the man – they're a total shadow of their former selves," Carol says.

Married in their 30s, Carol and Stuart, from Bradford, West Yorkshire, had seven children between them and 13 grandchildren. The stonemason adored his grandkids, but as his health deteriorated, he no longer wanted them to see him, so they would remember him as he had been before his decline into ill health.

Protection at work

Carol Johnson and the family of Stuart's coworker Paul Gray, who also died after developing silicosis, instructed law firm Irwin Mitchell to investigate where the pair might have been exposed to silica dust. Irwin Mitchell solicitor Oliver Collett represented both men's families, winning them settlements last year from their former employer. He says bosses need to take steps to prevent their workers from inhaling silica dust.

"Your first port of call is to eliminate the harmful substance... you then move on to reducing any dust exposure to the lowest level practicable," he says. He cites water-based dust suppression systems and dust extraction at the cutting source as two crucial methods for limiting silica inhalation.

"These guys were stone dressers, they were working outdoors quite a lot, and they were hunched over, cutting. They weren't using any water suppression," Collett says.

"One of the common comments we get from defendants in those sorts of circumstances is 'they were outdoors, there was no risk' – that's wrong, there absolutely is a risk. Even if you're outdoors you're still getting a big hit of silica particles forced into your face as you cut it."

He adds that employees themselves should be aware of the risks, and that those working with high-silica materials should be offered regular health screenings.

His law firm has launched an online register for those who believe they have been exposed to silica at work to record details of their exposure, in case they later want to launch a legal claim. It is free to use and available to anyone, whether or not they later decide to be represented by Irwin Mitchell in any legal action.



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DR JOHANNA FEARY, ROYAL BROMPTON HOSPITAL

A new threat

The growing popularity of artificial stone, also known as engineered stone or engineered quartz, has created new concerns over silicosis.

The material, generally manufactured using quartz aggregate and polymer, is cheaper than traditional stone and has been an increasingly fashionable material for kitchen worktops since the early 2010s. But after it was linked with a spate of silicosis cases, Australia banned the manufacture and supply of benchtops, panels and slabs made from engineered stone in July 2024, and outlawed imports of them at the beginning of 2025.

Concern about the new material has now reached the UK. Dr Johanna Feary, a respiratory consultant at the Royal Brompton Hospital in

London, was among those who discovered the UK's first cases of silicosis among artificial stone workers in mid-2023.

Those first eight cases, all men, ranged in age from 27 to 56 at the time of diagnosis. The average age at diagnosis was 34 – almost half that of other sources of silica dust exposure. Two of these men have since died.

“Historically we’ve thought you need 10 years, if not more, exposure to stone dust containing silica to develop silicosis... so somebody who has less than 10 or 15 years of exposure we wouldn’t really worry about,” she tells *Construction News*. “The difference with artificial stone silicosis is people are getting it much faster, and in many cases it is progressing much faster, than silicosis from natural stone.”

Feary says there are two reasons for engineered stone silicosis hitting people younger and making them ill faster. One is its very high silica content – it often contains 90-95 per cent silica compared with 80 per cent for sandstone or 30-40 per cent for granite. The other is that it is easy to work with. “You don’t need lots of fancy equipment, you can [easily] cut it with an angle grinder without water suppression, so people are doing it on a much more casual basis,” she says.

Easy to ban?

With engineered stone being much deadlier, is there any scope for a ban here in the UK?

Renee Carey, a research fellow at Curtin University in Perth, Western Australia, co-authored a paper in 2022 that concluded the ban on artificial stone would prevent almost 1,000 cases of silicosis and 100 instances of lung cancer over the course of a lifetime.

“We had benchtops for many, many years before engineered stone, so it’s not a necessity,” she tells *CN*. “Companies have already come out with zero-silica versions of engineered stone, so it was an easy thing to ban, I think.”

However, not everyone in the UK is keen on such tough restrictions. The Worktop Fabricators Federation (WFF), for instance, argues that the damage caused by working with engineered stone is an issue of factory management, not the material itself. “Banning engineered quartz does not remove the risk of respirable crystalline silica dust exposure,” the WFF said in a statement last August. “Many natural stone materials contain high proportions of crystalline silica, as do

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many ceramic products. Good-quality factory management, water-based dust suppression and proper monitoring of workers' health are still absolutely de rigueur in a well-run worktop factory, immaterial of the precise material under the saw."

It also claims that standards in the Australian sector before its legal changes were "well short" of UK requirements, and that engineered stone products on the market today have significantly less silica content than 10 years ago.

The HSE has not signalled any changes to regulations. However, a spokesperson says it is "open to considering any interventions that will positively impact reduced risk and non-compliance".

The body recently met artificial stone manufacturers to discuss potential controls on the material and plans to hold future workshops with supply chain companies, the spokesperson adds.

"I can see the logic in trying to push for a ban," says Irwin Mitchell's Collett, although he cautions that a ban on engineered stone alone would not be enough to tackle silicosis.

"I think it should be considered and investigated, but a massive emphasis needs to be put on the overall approach to health and safety measures when it comes to silica exposure, [including] making sure workers appreciate what the potential risks are."

He adds: "The HSE needs more teeth and better resourcing to go in and inspect these businesses and find rogue traders."



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OLIVER COLLETT, IRWIN MITCHELL

Carol Johnson also urges the HSE to carry out more inspections, and companies to take the risks seriously. Otherwise, families will continue to lose people they love.

"It's the wives and the children that are left behind," she says. "[My children's] dad was such a big character. Losing that character in our family was devastating." **CN**

Health advice and safe-working tips

Anyone concerned that they have been exposed to silica and may be at risk of silicosis can contact Lungs at Work, which is overseen by professionals from the Royal Brompton and Harefield Hospitals NHS Trust, for free advice. Visit www.lungsatwork.org.uk for more information.

The HSE says its inspectors often find poor conditions at companies, exposing workers to silica dust.

It released a simplified dos and don'ts guide for stone worktop

installers in January, outlining the key controls for safe workplaces. It can be viewed at workright.campaign.gov.uk/campaigns/stoneworking.

The British Occupational Hygiene Society has released a free online training tool for anyone working in the kitchen worktop industry to understand workplace risks and simple measures that can be taken to improve safety.

The organisation worked with Influential Management Group and

the Worktop Fabricators Federation (WFF) to produce the resource, which is available at tinyurl.com/ms26r976.

Launching the guidance, WFF general secretary Chris Pateman said cheaper products are often produced by companies that skimp on safety. "If someone offers you a bargain stone worktop, just remember, the chances are that the young person who cut it will probably have a shorter life expectancy than your worktop," he says.