

### [Dealing With Dust: The Effects Of Particulate Exposure](#)

In a facility with many obvious industrial hazards, such as heavy plant and machinery, a bit of dust can seem innocuous.

It may be mandated that you wear some form of PPE to guard against this, but for many people it is still an irritant more than an active risk. As a result, protections against it can fall by the wayside and be ignored or improperly applied.

But while the impact of dust is not quite so obvious as a crush injury or amputation, the long term side effects can be severe. Silica dust, cleaning products and a variety of industrial chemicals can all impact on the condition of the lungs, causing permanent respiratory damage and an estimated 12,000 related deaths every year. Controlling this risk is simpler than you might think, and could save money as well as lives. [\(Read More\)](#)

### **Real risks**

While asbestos is a less present risk to engineers, we're all well aware of its dangers. It will continue to contaminate buildings and brownfield sites for decades, and its legacy continues to manifest itself in thousands of deaths from mesothelioma and asbestosis every year. Most dust is far less aggressively damaging than this, but it's also much more common to encounter, and in greater quantities than one would ever find asbestos.

The kind of dust you'll find in the workplace tends to be very different from the dust at home. Processes such as mechanical cutting, shaping, crushing, sawing, grinding and abrasive blasting all create plumes of dust known as respirable crystalline silica (RCS). This by-product of building materials essentially consists of thousands of tiny airborne shards.

When RCS dust is inhaled, it is absorbed into the deepest reaches of your lungs. The jagged

edges can cause damage and irritation to the cells which absorb oxygen, potentially causing permanent damage and impairing your ability to breathe. This process of damage and repair can also cause changes in the cells which can lead to several forms of lung cancer.

### Solving the problem

The US safety authority OSHA has recently halved the maximum permissible exposure limit for RCS to 50µg/m<sup>3</sup>, with the UK limit remaining at 100µg/m<sup>3</sup>. This speaks to a shift in attitudes around respirable dust, and provides your facility with an opportunity to act ahead of time, and set the standard. Thankfully, there are a number of ways to reduce the risks of dust in the workplace.

You should start by reappraising your working practices. You may find that changes to the process of cutting or blasting may reduce dust production or exposure, whether that is the methodology or the use of wetting or damping. Foam suppressors are widely considered to be more effective than water-based systems, although this could interfere with some machinery and may not be suitable for every usage scenario.

If dust cannot be eliminated, it should be extracted with maximum efficiency. Different systems will suit different facilities: static lines will benefit most from vacuum pipes or arms, which can be attached to a powerful freestanding unit or larger extraction system. For any site work, pipes from portable extractors can be strapped directly to tools, providing efficient dust extraction at the point of release.

Finally there is respiratory protective equipment (RPE). While many people see RPE as a primary form of protection, it should be seen as a last line of defence. Much as harnesses come second to good working practices at height, RPE should be redundant if you eliminate dust properly. By implementing these tips to control dust, you can ensure a happier, healthier and more productive workforce.

For further details visit:  
[www.samsltd.co.uk](http://www.samsltd.co.uk)