Health and safety Time for change

Reclaiming health and safety at work

TUC

Dust – the biggest workplace killer

Dust in the workplace is not just a nuisance. It can be a killer. Dust is simply small particles in the air. Often these particles are too small to be seen but, because they are airborne, they can be breathed in through the nose and mouth. Larger sized particles (inhalable dust) are often filtered out in the nose and throat. Smaller size dust (called thoracic dust) can reach the lungs. If the dust is small enough it can be inhaled deeply (respirable dust). Very small particles can pass through the lungs into other organs of the body. Smaller particles also stay in the air for much longer so can be a danger for a longer period of time.

Usually the smaller particles are the most hazardous but inhalable dust can also cause major health problems. A lot of dust however contains particles of different sizes and may be a mixture of inhalable and respirable.

The two most serious health problems caused by dust are cancers of the lungs, throat and nose, and other lung conditions called Chronic Obstructive Pulmonary Disease (COPD), a term that includes chronic bronchitis and emphysema.

No-one knows how many deaths are caused by workplace cancers. A report in 2007 gave a likely figure of between 7-8,000 for cancers of the lung, the lining of the lung and the nose that are due to work[1]. The TUC believes that this is a low estimate and the true picture could be much worse. A further 4,000 people die each year as a result of COPD caused by exposure to dusts in the workplace[2]. This means that dust is, by far, the biggest cause of work-related death.

However it is not only cancer and COPDs that dust can cause. Many dusts also cause asthma and other allergies, rhinitis and even heart disease. Some can also be an explosive hazard if they are allowed to build up.

Some of the diseases caused by dust take decades to develop and once symptoms appear it is too late. Often the worker will have left the workplace by the time they develop a cancer or COPD, especially in industries with a high turnover, like construction.

Often people think the problems of dust have long gone as most of the exposure was from industries that have disappeared such as coal mining and textile manufacturing. This is not the case. There are still huge problems with dust in a wide range of workplaces including bakeries, quarrying, agriculture and construction. In some sectors the problem is getting worse. Recycling has led to a whole new sector of workers being exposed to a wide range of dusts, while in construction refurbishment work is more common and the use of materials like plasterboard mean that often workers are exposed to very high levels of dust. The same is

true in some manufacturing processes and warehousing where increased use of MDF has led to a significant dust problem. Recent research by the HSE has highlighted many of these concerns.[3]

The law

The number of deaths and disablement caused by dust shows that the current regulations on dust are failing to protect workers. At the moment, if any worker is exposed above a certain level, employers are meant to take action to remove the risk. The level for general dust is if it is present at a concentration in air equal to or greater than 10 mg/m³ of inhalable dust or 4 mg/m³ of respirable dust as measured by a formulae that takes account of the length of time that a person is exposed, so it is the equivalent of an 8 hour day. This is called the 8 hour TWA. In addition some dusts have been assigned specific Workplace Exposure Limits (WELs) and these limits should not be exceeded. There are over 500 substances that have been given a WEL, including many dusts. There are separate regulations covering asbestos dust.

Unfortunately a lot of dust does just not contain one substance. It could be a mixture of different substances, some of which are covered by the dust exposure limit and others may have their own WEL. However if a mixture of dust includes a substance with a WEL then the exposure must be managed at least below the WEL for that substance.

Also many employers do not recognise the dangers of dust, and so do not take any action to prevent exposure to it. This is particularly a problem where the dust particles are too small to be seen. This is the kind of dust that is usually most dangerous because it can get deep into the lungs, but often the employer and the workers will not be aware that it is there unless they are monitoring the air.

The law requires an employer to carry out health surveillance where workers are exposed to a dust linked to a disease or illness if it is likely that the illness is liked to work and can be detected However the TUC believes that whenever workers are exposed to dust, employers should be checking the health of their workforce. This should include regular lung function tests.

Why the dust limit is far too high

The TUC believes that the current standards used for the assessment of dust exposure in the workplace are totally inadequate. There is now clear scientific evidence which suggests that the current UK limits for inhalable and respirable dust of 10 mg/m³ and 4 mg/m³ respectively should be much lower[4].

This view is supported by the Institute of Occupational Medicine (IOM), an independent, non profit organisation that works outside of government to provide unbiased and authoritative advice to decision makers and the public. The IOM has said that "the current British occupational exposure limits for airborne dust are unsafe and employers should attempt to reduce exposures to help prevent further cases of respiratory disease amongst their workers"[5].

There is a wide range of research that shows that a considerable number of the cases of cancer and COPD caused by dusts are caused by exposure that is below the current legal limit.

Research done for the HSE in 2006 looked at five kinds of dust, including coal dust, talc and kaolin. For coal dust the evidence showed sizeable reductions in lung function at exposures as

low as 1 mg/m³ over a working lifetime of 40 years. The data from other dusts is even more worrying. The four dusts which were compared with coal dust all showed more severe effects on the lung at the same exposure levels. HSE data suggests that at least 12 per cent of workers could develop significant reductions in their lung function, with profound results for their respiratory health.[6]

Regulations also need enforcement

However we need more than just stronger regulation. We also need proper enforcement of the regulations and that is not happening. Despite the detailed regulation on exposure limits, monitoring and surveillance, there is far too little enforcement action as many of the industries with big dust problems are mainly small or medium-sized workplaces where the chances of seeing an inspector are very low.

One of the most common dusts is silica, which is found in many common building materials including sand, stone and cement. It causes a chronic and disabling lung condition called silicosis. In addition silica can cause cancer. HSE funded research shows that compliance rates are actually only 33 per cent. If there was proper enforcement, and the rate of compliance were to be raised to 90 per cent the number of deaths prevented could be around 700. The conclusion of the researchers was that if the exposure level were to be reduced and enforcement increased the rate of lung cancers caused by silica exposure could be cut from the present 2.07 per cent of all lung cancers to almost nothing[7].

Some European countries have already started reducing their dust limits and trade unions want the UK to follow. The TUC believes that there should be a precautionary standard of 2.5 mg/m³ for inhalable dust (as opposed to the current 10 mg/m³ standard) and 1 mg/m³ for respirable dust (as opposed to the current 4 mg/m³ standard) for all general dust and dusts where there is not a lower WEL. We also need more enforcement of the standards.

References

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