

# Construction Newsletter September 2018

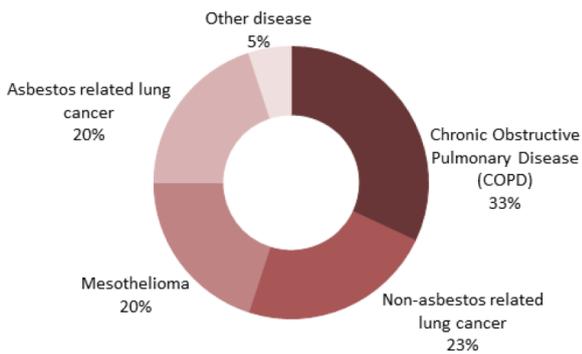
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## Construction Safety Solutions Ltd

### It's just dust?

**12,000 workers killed on average each year from dust exposure....that we know of!**

#### Death Rate Percentage



**How much Silica dust can you be exposed to in an 8-hour period after all the relevant control measures have been used?**



Dust	Inhalable	Respirable
RCS	-----	0.1mgm <sup>3</sup>
Wood	5 mgm <sup>3</sup>	As inhalable
Lower Toxicity	10 mgm <sup>3</sup>	4 mgm <sup>3</sup>

The below doesn't include other effects of dust exposure such as heart and brain conditions as well as bladder cancer.

Table 1: Current annual mortality from respiratory diseases in Great Britain

Disease	Current annual deaths	Percentage of total	Basis for estimate
Mesothelioma	2,542	(20%)	Count from death certificates
Asbestos-related lung cancer	Approx. 2,500	(20%)	Estimated from epidemiological information
Lung cancer due to other agents	Approx. 2,800	(23%)	Estimated from epidemiological information (Burden of occupational cancer in Britain)
COPD	Approx. 4,000	(32%)	Estimated from epidemiological information
Other:			
Pneumoconiosis:			Counts from death certificates
Coal workers pneumoconiosis	130		
Asbestosis	467		
Silicosis	11		
Farmer's lung and other allergic alveolitis	8		
Byssinosis	2		
Total other	618	(5%)	
<b>Total</b>	<b>Approx. 12,000</b>		

### Silica Dust

#### What is Silica Dust?

Silica is a natural substance found in rocks, sand and clay and in products such as bricks and concrete. Silica is also used as filler in some plastics. In the workplace these materials create dust when they are cut, sanded, drilled etc. Some of this dust is fine enough to breathe deeply into your lungs and cause harm to your health. The fine dust is called respirable crystalline silica (RCS) and is too fine to see with normal lighting.

Types of activities that create dust containing RCS include;

- Grinding, drilling, cutting, sanding, chiselling, blasting.
- Polishing, conveying.
- Fettleing.
- Mixing and handling, shovelling dry material.
- Rock drilling/breaking/crushing/screening.

## Wood Dust

Wood dust can cause serious health problems. It can cause asthma, which carpenters and joiners are four times more likely to get compared with other UK workers. The Control of Substances Hazardous to Health (COSHH) Regulations 2002 require that you protect workers from the hazards of wood dust. Hardwood dust can cause cancer, particularly of the nose. Settled dust contains the fine particles that are most likely to damage the lungs.

### Exposure limits

Both hardwood and softwood dusts have a Workplace Exposure Limit (WEL) of 5mg/m<sup>3</sup> which must not be exceeded. These are limits placed on the amount of dust in the air, averaged over an eight-hour working day. However, you must reduce exposure to wood dust to as low as 'reasonably practicable'.

### Extraction

Provide dust extraction (also known as [local exhaust ventilation or LEV](#)) at woodworking machines to capture and remove dust before it can spread.

Design the extraction system to take into account:

- The number and type of machines to be connected to it, the ones that are used together and the layout of the workshop or factory. This information should be supplied by the user.
- The machine manufacturer's information or an experienced body's information on air flow and extraction cross-sectional areas or volume flow rates (VFR) required for each extraction connection for each machine.

### How can we eliminate/reduce dust exposure in construction?

- The use of suppression such as water which must be used at the correct flow rate to the task.
- On tool extraction for all types of work that will produce dust. Extraction MUST be M or H class and have the correct fittings.
- Cutting carried out of site at premises with specialist workshops.
- Use of air filters and dust cubes.
- NO DRY SWEEPING! Use M or H class vacuums.
- Use of designated cutting rooms with extraction systems and air purifiers.
- Use of PPE/RPE is a last resort!

In the workplace, the following can happen;

- Leaks or spillages cause a build-up of dust containing RCS.
- Dust containing RCS is not cleaned up safely, eg by dry sweeping rather than using M or H class vacuum.
- Clothing and surfaces are contaminated with dust containing RCS.
- Accumulated dust containing RCS is raised from the ground or other surfaces by moving vehicles and people.
- Fine dusts remain in the air from work activities.

*How can RCS harm your health?*

By breathing in RCS, you could develop the following lung diseases;

- *Silicosis* – Silicosis makes breathing more difficult and increases the risk of lung infections. Silicosis usually follows exposure to RCS over many years, but high levels of exposure can lead rapidly to ill health.
- *Chronic obstructive pulmonary disease (COPD)* – COPD is a group of lung diseases, including bronchitis and emphysema, resulting in severe breathlessness, prolonged coughing and chronic disability. It may be caused by breathing in any fine dust, including RCS. It can be very disabling and is a leading cause of death. Cigarette smoking can also make it worse.
- *Lung Cancer* – Heavy and prolonged exposure to RCS can cause lung cancer. When someone already has silicosis, there is an increased risk of lung cancer.

**The health risks from RCS are insignificant when the exposure to dust is adequately controlled – you do not need to become ill through work activities**

## PC's £40k penalty for workers' RCS exposure

A Hertfordshire-based construction contractor has been prosecuted and fined £40,000 after allowing workers on a refurbishment project to be exposed repeatedly to brick dust. Respirable crystalline silica (RCS) is the second biggest construction risk after asbestos.

## Use of on tool extraction

On tool extraction is a recognised means of controlling dust when cutting/grinding or chasing when working on site. There are many different extraction systems and attachments that can now be used for most tools. Extraction must be accompanied by the correct attachments and capture hoods to ensure it is effective.

The minimum class of extraction that should be used on site is M class or H class. L class extractors must only be used for low toxicity materials such as gypsum although it is still advised that only M or H class are used on construction sites.

If the extraction system is M or H class, there will be a sticker to show this along with a means of alarm when the airflow rate has fallen below requirements. LEV systems must be put through a thorough examination test every 14 months. Evidence of this must be retained on site for when inspections take place.

The use of on tool extraction and suppression may reduce but, in most cases, do not eliminate dust exposure. In some cases (especially with silica exposure RPE will also be required.

## Useful links and publications

*I have attached a number of links to publications, resources and other materials regarding dust. Please use these and get the message across to your employee's and clients to ensure we can combat this together.*

<http://www.hse.gov.uk/woodworking/wooddust.htm>

<https://www.citb.co.uk/health-safety-and-other-topics/health-safety/construction-dust-partnership/controlling-dust>

<https://www.citb.co.uk/documents/topics/health-safety/hs%20cdp%20control%20resources/construction%20dust%20-%20industry%20survey.pdf>

<http://www.hse.gov.uk/pUbns/indg463.pdf>

<https://www.notimetolose.org.uk/>

<http://www.hse.gov.uk/pubns/cis69.pdf>

*If anyone has any questions, please do not hesitate to contact me.*

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## RPE

*What is RPE?*

RPE is respiratory protective equipment which can be used for exposure to a many hazardous substances. There are many different types of RPE that can be selected and used, and this should be suited to the task and the individual.

Selecting the right RPE will involve risk assessments of the work and environment that it is taking place in. The time the works will be carried out and the individual who will be required to wear RPE also must be established.

Generally, FFP3 masks will be worn for tasks where exposure to wood dust/silica is likely to occur. These can be disposable or reusable which generally are half face masks. These **MUST** be face fit tested and evidence retained on site. Users must be clean shaven as the dust particles are much smaller than a human hair and protection is dramatically reduced.

If the activity is likely to be more than one hour, then breaks must be introduced or a different type of RPE used with airflow provided. This is due to the user possibly becoming uncomfortable and adjusting or altering the mask. Also sweat can have an impact on mask positioning.

We know that many workers in construction are not clean shaven and due to this there are a number of innovations in place. More recently an all in one helmet, class A visor and ear defenders along with dust mask and filter have been introduced. This allows workers who are at risk to be protected at all times, they do not have to be clean shaven or face fit tested and other components do not interfere with the effectiveness of the respiratory equipment.

Granted they are not cheap, but in a sector where health is now a key focus and where so many preventable deaths are occurring, this is just one of many solutions to help construction workers live healthier and longer lives.

It doesn't matter if it is just a small amount of cutting slabs or bricks...all the correct control measures must be in place before RPE.

<http://www.breathefreely.org.uk/assets/rpe-fact-sheet.pdf>