



## Introduction

If you are working in highway paving construction or maintenance work, it is highly likely that you use a cut-off saw (also known as a disc cutter, a con saw or a 'whizzer'). Cutting kerbs, paving or blocks can produce enormous amounts of dust (stone dust). The stone dust will contain some very fine dust called **respirable crystalline silica (RCS)**. Exposure to RCS dust can cause serious health problems and may eventually kill you.

HSE and the Highways Agency have produced this leaflet which explains how stone dust exposure can affect your health and what you can do to control the risks.



RCS exposure without dust suppression can be massive

## Health effects

Stones, rocks, sands and clays may contain large amounts of crystalline silica. They are used to make kerbs, flags, bricks, tiles and concrete. Even plastic kerbs can contain a silica-based filler. Cutting these materials produces very fine RCS particles in the airborne stone dust. These particles are small and you can't always see dust given out by cutting.

If you breathe in too much RCS you could develop the following lung diseases.

### **Silicosis**

Silicosis makes breathing more difficult and increases the risk of lung infections. It usually follows many years of exposure. But exceptionally high exposures over a few months or years can cause these symptoms.

### **Lung cancer**

Heavy and prolonged exposure to RCS can cause lung cancer.

### **Chronic obstructive pulmonary disease (COPD)**

COPD is a group of lung diseases like bronchitis and emphysema that may also be caused by RCS, resulting in severe breathlessness and prolonged coughing. The disease is slow to develop and rarely seen in people under 40. It can be very disabling and is a leading cause of death.

## Be aware!

- You can't always see dust from cutting.
- Dust could harm workmates and other people standing near you.



## Managing or reducing the risk

### *Damp down the dust*

Water suppression is your first line of defence. All modern cut-off saws have an attachment for a water hose. The water can be supplied from a mains feed (the best option) or a pressurised water bottle. You need a minimum flow rate of **0.5 litres per minute** to damp down dust effectively.

### *Wear a suitable dust mask*

Even with water suppression you will need to wear a suitable dust mask (respirator).

**Nuisance-grade dust masks do not protect your lungs.** Use one with an assigned protection factor of at least 10, even when your water suppression equipment is working effectively. Use either FFP3 filtering facepieces or orinasal respirators with P3 filters.

### *Maintain equipment*

Check your machinery and safety equipment regularly.

- Make sure the water jets are working properly. Maintaining an adequate water flow by cleaning the water jets is essential and should be done at least every time the blades are changed.
- Replace worn cutting discs to reduce the cutting time.
- Maintain hoses and bottles.
- Inspect and maintain masks.

## Other risks

Make sure you deal with other risks, eg:

- noise;
- flying debris;
- water spray;
- hand-arm vibration;
- manual handling.

Consider the safety of yourself and others when you operate a cut-off saw. Use suitable personal protective equipment, such as hard hats, safety glasses and ear defenders. Make sure these items are worn correctly and are suitable for use together.

### Remember!

- Always damp down dust.
- Wear a suitable dust mask.

RCS dust



You are at risk if the dust you breathe in over a full shift contains more RCS than the amount shown next to the penny

## Find out more

To protect employees and others, employers should comply with the workplace health and safety requirements in the Control of Substances Hazardous to Health Regulations 2002 (COSHH).

HSE has produced simple guidance on how to control RCS exposure in construction. These *COSHH essentials* guidance sheets are at:

[www.hse.gov.uk/pubns/guidance/cnseries.htm](http://www.hse.gov.uk/pubns/guidance/cnseries.htm). *COSHH essentials* sheet CN6 provides good practice advice for cutting paving and kerbstones with rotary cutters.

*Stone dust and you* Leaflet INDG315(rev1)  
HSE Books 2006 (single copy free)  
[www.hse.gov.uk/pubns/indg315.pdf](http://www.hse.gov.uk/pubns/indg315.pdf)

For more information about noise, see *Noise at work: Guidance for employers on the Control of Noise at Work Regulations 2005* Leaflet INDG362(rev1)  
HSE Books 2005 (single copy free or priced packs of 10 ISBN 978 0 7176 6165 7) [www.hse.gov.uk/uk/pubns/indg362.pdf](http://www.hse.gov.uk/uk/pubns/indg362.pdf)

For more information on hand-arm vibration, see *Control the risk from hand-arm vibration: Advice for employers on the Control of Vibration at Work Regulations 2005* Leaflet INDG175(rev2) HSE Books 2005 (single copy free or priced packs of 10 ISBN 978 0 7176 6117 6)  
[www.hse.gov.uk/pubns/indg175.pdf](http://www.hse.gov.uk/pubns/indg175.pdf)

For manual handling information, see *Getting to grips with manual handling: A short guide* Leaflet INDG143(rev2) HSE Books 2004 (single copy free or priced packs of 15 ISBN 978 0 7176 2828 5)  
[www.hse.gov.uk/pubns/indg143.pdf](http://www.hse.gov.uk/pubns/indg143.pdf)

This leaflet is produced in conjunction with the Highways Agency

## Further information

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA Tel: 01787 881165  
Fax: 01787 313995 Website: [www.hsebooks.co.uk](http://www.hsebooks.co.uk)  
(HSE priced publications are also available from bookshops and free leaflets can be downloaded from HSE's website: [www.hse.gov.uk](http://www.hse.gov.uk))

For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566  
Textphone: 0845 408 9577 e-mail: [hse.infoline@natbrit.com](mailto:hse.infoline@natbrit.com) or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

**This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

© *Crown copyright* This publication may be freely reproduced, except for advertising, endorsement or commercial purposes. First published 02/08.  
Please acknowledge the source as HSE.