



Time to clear the air

This briefing provides information on the project for reducing respiratory disease in kerb, paving and block cutting. It is provided to local authority chief executives, council leaders and all APSE construction contacts.

Key issues

1. A working group involving APSE was established by the Health and Safety Executive (HSE) in 2007 to tackle respiratory disease in kerb, paving and block cutting.
2. They have identified practical ways to manage or reduce the risks.
3. The APSE health and safety seminar on 2 September 2008 will explore these issues further.

1. Introduction

In 2007, APSE were invited by the Health and Safety Executive (HSE) to be involved in a stakeholder group to tackle respiratory disease associated with exposure to dusts generated by kerb, paving and block cutting operations. A member of the APSE roads and highways advisory group, Tameside MBC, agreed to represent APSE on this working group alongside other stakeholders including representatives from Construction, Manufacturers, Hire Companies & Associations, Local Authorities, Highways Agency, Subject Experts, Training Bodies and the HSE. This briefing paper outlines some of the work undertaken by the stakeholder group to date.

More information is available by clicking on the following link: <http://webcommunities.hse.gov.uk/inovem/inovem.ti/kerbcutting.community/grouphome>

2. The risk

Highway paving construction or maintenance work usually involves use of a cut-off saw (also known as a disc cutter, a con saw or a 'whizzer'). Cutting kerbs, paving or blocks can produce large amounts of dust (stone dust). The stone dust will contain fine dust called respirable crystalline silica (RCS) and exposure to this can result in health problems and may lead to death.



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

Breathing in too much RCS can result in the following lung diseases:

- Silicosis; this makes breathing more difficult and increases the risk of lung infections and usually follows many years of exposure. However, exceptionally high exposures over a few months or years can cause these symptoms.
- Lung cancer
- Chronic obstructive pulmonary disease (COPD); which 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.

3. The working group

The working groups aim was to 'identify a range of practical interventions and lead on their implementation to reduce or eliminate the risk of respiratory disease in kerb, paving or block cutting'. To deliver this aim, the group would:

- Use available behavioural research, survey information and exposure measurements that will help highlight where compliance with legal requirements and good practice is failing.
- Work with others using a framework devised by the working group members to identify and deliver solutions.
- Ensure stakeholders are engaged in this process through open communication.

A number of the working group members are already actively involved in producing guidance and implementing initiatives. At the end of the work, the HSE plan to deliver a suite of measures that will be implemented across the supply chain, these will be supported by training, technical information and operational guidance including case studies of good practice.

4. Managing or reducing the risk

The group has identified the issues and is devising solutions that are relevant to all in the supply chain. Practical interventions to manage or reduce the risk that have been identified so far include:

- 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 pressurized 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 where the water suppression equipment is working effectively. Use either FFP3 filtering facepieces or orinasal respirators with P3 filters.
- Maintain equipment and 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

Tameside MBC who represented APSE on the working group has developed a case study on the use of water suppression equipment. The council introduced portable polypropylene pressurised water tank units to accompany every cut-off saw when cutting concrete and clay products. Operator awareness of respiratory protective equipment (RPE) was also important.

To do this they:

- Purchased 20 portable polypropylene pressurised tank systems and distributed them to each construction gang.
- A number of hoses, reels and connectors were also purchased so (where possible) cut-off saws could be connected to receive the mains water supply.
- Through development review meetings, toolbox talks and referring to method statements/risk assessments, workers were told the reasons for using the wet-method control systems of dust suppression must be followed at all times.
- Operator awareness and refresher training in dust control is ongoing.

This meant that dust emissions were captured and contained at source and the vastly reduced dust emissions, which is beneficial both for the workers on site and the general public within the vicinity of the cutting. Additional benefits include:

- Using water significantly increases the life of the disc and prolongs the lifespan of the cut-off saw motor.
- The portable tank is light, can simply be connected to the saw, is easy to handle and can be transported around site as necessary.

5. Commentary

The aim of the HSE is to reduce or eliminate the risk of respiratory disease in kerb, paving or block cutting. They are hoping that local authorities will contribute to this by:

- Damping down or extracting the dust
- Wearing breathing protection
- Or better still, avoiding the cut

The health hazards account for a significant proportion of illnesses in construction; according to recent research, RCS accounted for more than 500 cases of lung cancer in construction workers in Great Britain in 2004 (source: HSE).

APSE believes that the work of the stakeholder group is the key to tackling the problem, through clients, contractors and suppliers working jointly. For member authorities, this means learning from the experiences gained by those involved in the group, including Tameside MBC. The forthcoming APSE seminar on 2 September 2008 on health and safety for highways, building construction and transport services will include presentations from the HSE and Tameside on this project, as well as exploring other health and safety issues such as manual handling, asbestos, driver responsibilities, noise and vibration. Full details of the seminar programme will be issued in due course.

The full case study from Tameside MBC, (Construction Occupational Health case study COH13) is available from <http://www.hse.gov.uk/construction/healthrisks/coh13.pdf>. In addition, free leaflets and DVD's are available from the HSE; email djohns@apse.org.uk for full contact details.

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