Construction Dust Partnership

RIDBA

Rural & Industrial Design & Building Association

www.citb.co.uk/cdp

The Construction Dust Partnership Group.

BSiF
BRITISH SAFETY INDUSTRY FEDERATION

BOHS
The Chartered Society for Worker Health Protection

Safety Groups UK
PROMOTING HEALTH & SAFETY NATIONWIDE

EPTA
THE EUROPEAN POWER TOOL ASSOCIATION

HSE

Hae

ICMMA

BUILDUK
Leading the Construction Industry

CONSIDERATE CONSTRUCTORS

img

ECA
Excellence in Electrotechnical & Engineering Services

NFDC
National Federation of Demolition Contractors
The voice of the UK Demolition Industry

UCATT
BUILDING TOGETHER

citb

unite
theUNION

working well together

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CONSTRUCTION INDUSTRY PARTNERSHIP

Is DUST really an issue?

HSE stats for 2015/16

- Fatalities in construction – due to safety issues?
- Occupational Cancer registrations in construction ?
- Deaths in construction – due to exposure to Silica ?

- 43
- 5,400
- 700+

An average of 13 people per week

www.hse.gov.uk/statistics/tables/index.htm

1 in 10 will get this for Christmas

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CONSTRUCTION INDUSTRY PARTNERSHIP

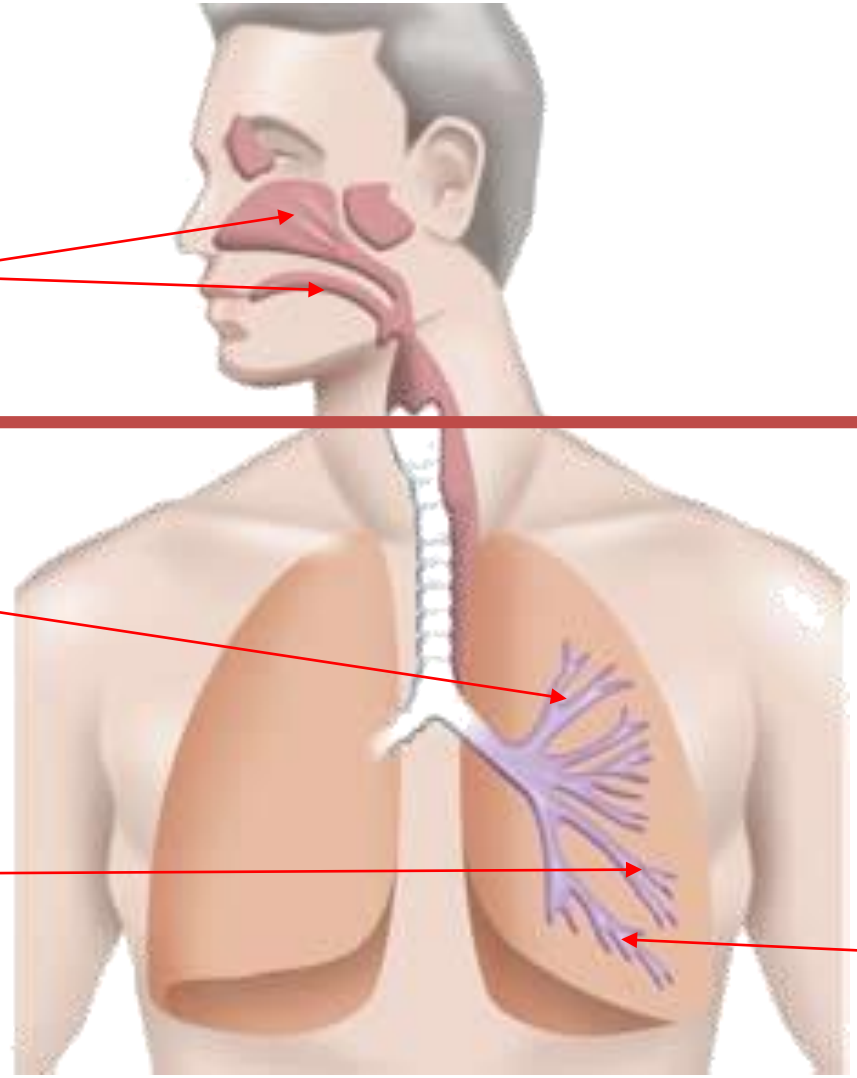
Construction Dusts.

- CDP focus on ALL construction dusts
  - Respirable Crystalline Silica (RCS)
    - Brick
    - Concrete
  - Inhalable and Respirable wood dust.
    - Hard woods
    - Soft Wood
    - MDF
  - Inhalable and Respirable “other” dusts.
    - Cement & Gypsum

Silica Content in materials

- Brick.
  - up to 30% content
- Concrete, Cement, Mortar.
  - 25% to 70% content
- Granite.
  - Up to 30% content
- Quartz.
  - Up to 70% content
- Slate.
  - Up to 40% content

Health risks



Wood Dust

Inhalable

Diseases:-
Acne
Dermatitis
Skin Cancer
Nasal Cancer

Welding fumes
Spray dust

Silica Dust

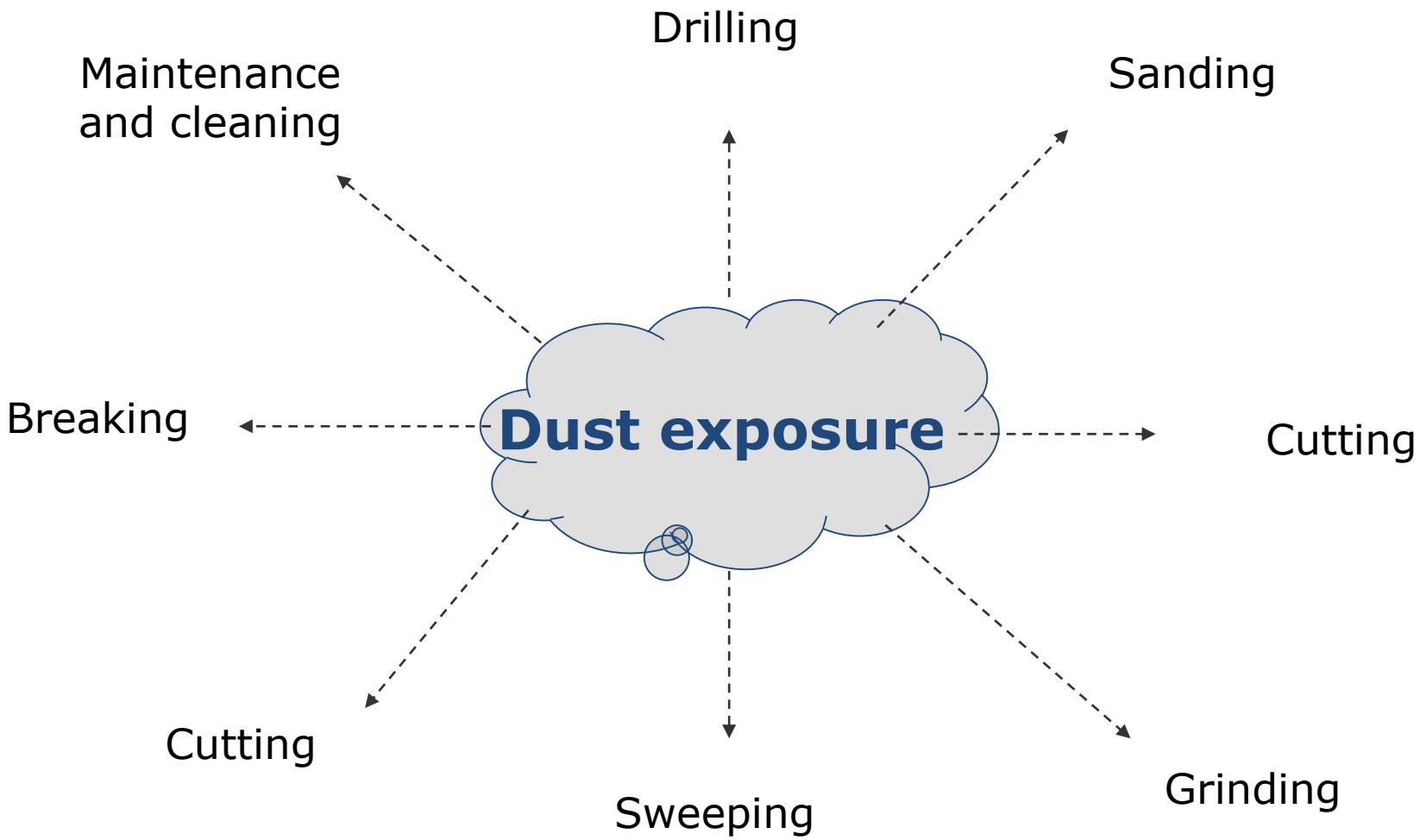
Respirable

Diseases: -
Asthma
Asbestosis
Cancer
Silicosis
COPD
(Chronic Obstructive Pulmonary Disease)

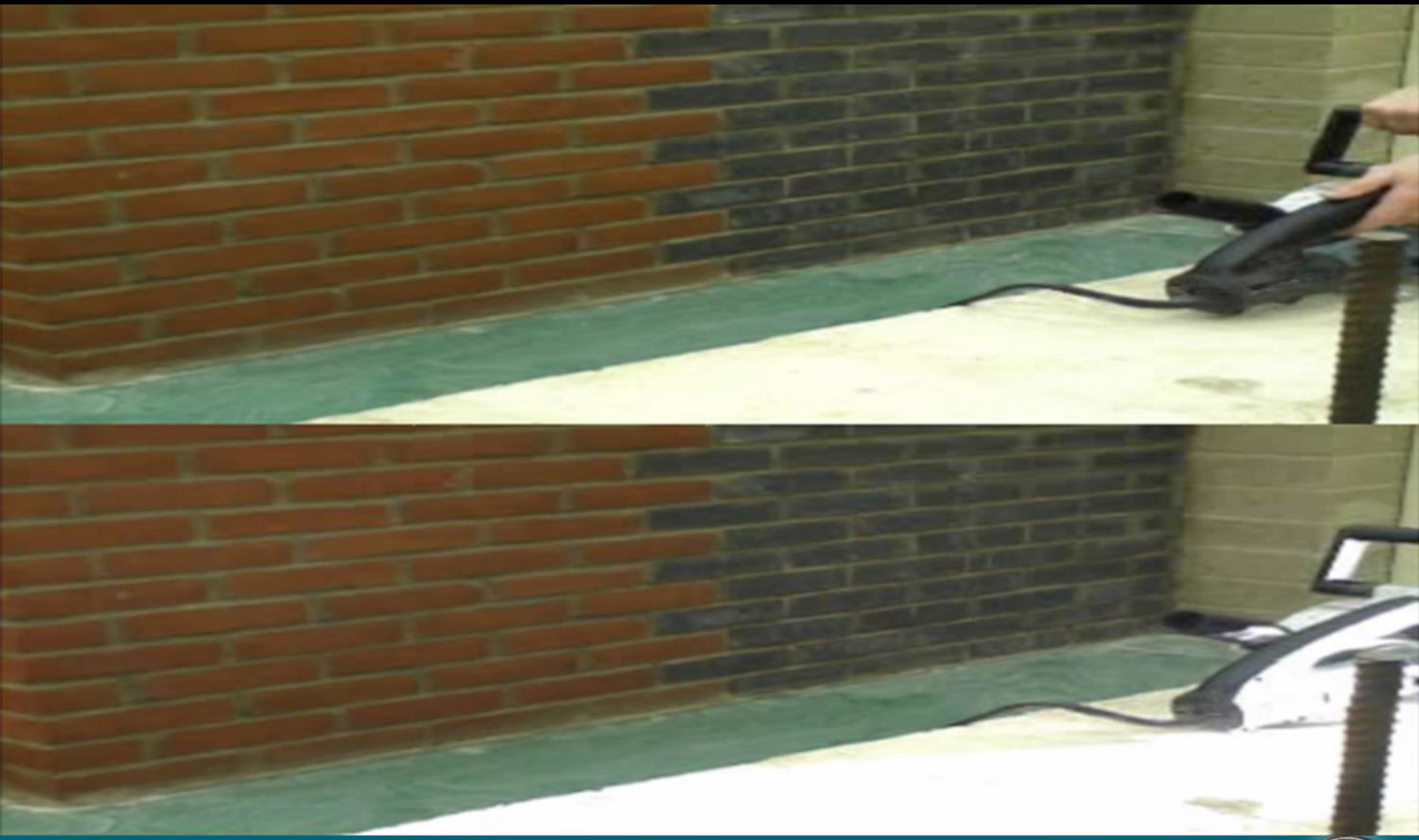
Asbestos

Now ask what health issue….

High risk activities….

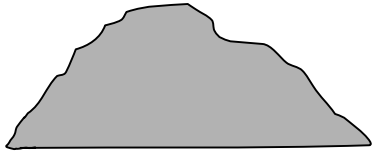


Dust……. What dust!!!



Dust…. Its not always what you see.

Volume of Dust per hour operation.



Configuration	Dust exposure
Electric wall chaser w/o extractor	15.4kg/h

Volume of Dust per hour operation.

Configuration	Dust exposure
Electric wall chaser w/o extractor	15.4kg/h

HSE exposure measurements…..

Without control

With control

Controls

On Tool Extraction system

A system consists of several interacting parts
Think carefully when choosing each components

1	2	3	4
			
Accessory	**Capture Device**	**Electric power tool**	**Dust extractor**

1. Accessory

2. Capture Devices

Most important part. Can be designed in or retro-fitted.
Check it:-

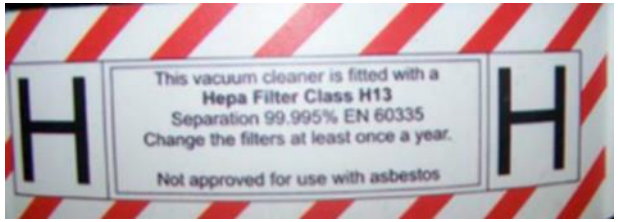
- Is designed for the tool and the work being done.
- Sits as close as possible to the work surface when in use.
- Is easy to use and does not interfere with the work unnecessarily

3. On tool extraction

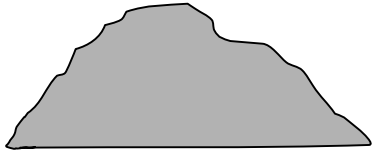
Many tools are now supplied with extraction ports as standard. Ensure when choosing a tool, extraction systems are available.

4. Choosing On-Tool Extraction

4. Choosing On-Tool Extraction

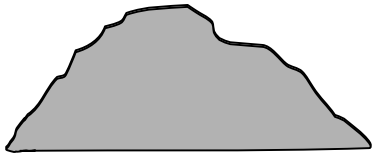


Effective Systems – M or H Class system



Configuration	Dust exposure
Electric wall chaser w/o extractor	15.4kg/h

Effective Systems – H or M Class



Configuration	Dust exposure
Electric wall chaser w/o extractor	15.4kg/h
Electric wall chaser with “H or M” class extractor	**0.22 kg/h**

Financial cost of non compliance.

A. £ 124.00

B. £ 500.00

C. £1,000.00

D. £2,000.00

E. £2,500.00

F. £7,750.00

Guidance – CIS36, 69 & 54

HSE

Health and Safety Executive

Construction dust

HSE information sheet

Construction Information Sheet No 36 (Revision 2)

Construction dust is not just a nuisance; it can seriously damage your health and some types can eventually even kill. Regularly breathing these dusts over a long time can therefore cause life-changing lung diseases.

This sheet tells employers what they need to know to prevent or adequately control construction dust risks. It also provides advice for safety representatives and workers.

Construction dust

This is a general term used to describe different dusts that you may find on a construction site. There are three main types:

- silica dust – created when working on silica-containing materials like concrete, mortar and sandstone (also known as respirable crystalline silica or RCS);
- wood dust – created when working on softwood, hardwood and wood-based products like MDF and plywood;
- lower toxicity dusts – created when working on materials containing very little or no silica. The most common include gypsum (eg in plasterboard), limestone, marble and dolomite.

Health risks

Anyone who breathes in these dusts should know the damage they can do to the lungs and airways. The main dust-related diseases affecting construction workers are:

- lung cancer;
- silicosis;
- chronic obstructive pulmonary disease (COPD);
- asthma.

Some lung disease, like advanced silicosis or asthma, can come on quite quickly.

Figure 1 Common tasks like cutting can create very high dust levels

However, most of these diseases take a long time to develop. Dust can build up in the lungs and harm them gradually over time. The effects are often not immediately obvious. Unfortunately, by the time it is noticed the total damage done may already be serious and life changing. It may mean permanent disability and early death.

Construction workers have a high risk of developing these diseases because many common construction tasks can create high dust levels. Over 500 construction workers are believed to die from exposure to silica dust every year. The amounts needed to cause this damage are not large. The largest amount of silica someone should be breathing in a day **after using the right controls** is shown below next to the penny.

Figure 2 Your maximum daily silica exposure is tiny when compared to a penny

1 of 6 pages

HSE

Health and Safety Executive

Controlling construction dust with on-tool extraction

HSE information sheet

Construction Information Sheet No 69

Introduction

This information sheet gives guidance on choosing, using and maintaining on-tool extraction for controlling construction dust. It is mainly for managers and supervisors but is also useful for trade union safety representatives and workers.

The hazards posed by construction dust

Regularly breathing construction dust can cause diseases like lung cancer, asthma, chronic obstructive pulmonary disease (COPD – which includes emphysema and other breathing difficulties) and silicosis. Silica is the second biggest killer of construction workers after asbestos.[1]

Some of the most common construction jobs create high dust levels. These jobs often involve the use of power tools like cut-off saws, grinders, breakers and sanders. There is a legal duty for employers[2] to prevent or adequately control worker exposure to construction dust. On-tool extraction is an effective control for this dust and will reduce the risk of ill health.

How to choose on-tool extraction

On-tool extraction is a type of local exhaust ventilation (LEV) system which is fitted directly onto the tool. The 'system' consists of several individual parts – the tool, captor hood, extraction unit and tubing. Each part plays a role in establishing how effective the system is and the level of control it gives. Manufacturers/suppliers do provide complete systems but some parts (especially extraction units) can be used with other tool makes and models.

It is important to choose parts that are compatible and work together. The dust may be poorly controlled if you do not. Make sure the system is right for the particular task(s) and the method(s) of work. Involve workers in the selection process. Use the following guidelines:

Tools and accessories

Limit the amount of dust created by choosing appropriate tools and accessories – eg sanding blocks/pads or grinding discs with enough holes to allow the dust to be extracted through them (see Figure 1).

Figure 1 Tools and accessories providing for effective dust removal

Captor hood

The hood is the most important part of the LEV system. It is often manufactured as part of the power tool but it can also be retro-fitted to existing equipment. See Figure 2 for examples.

1 of 4 pages

HSE

Health and Safety Executive

Dust control on cut-off saws used for stone or concrete cutting

HSE information sheet

Construction Information Sheet No 54 (Revision 1)

Introduction

This information sheet describes dust control systems used with cut-off saws. Two well-established dust control techniques, wet dust suppression and local exhaust ventilation (LEV), are described.

Cut-off saws (variously known as disc cutters, skill saws, Stihl saws, con saws or 'whizzers') are widely used in the construction industry. These saws can be powered by combustion engines, electricity (110 volts) or, less commonly, by compressed air. They are normally fitted with 9- or 12-inch (205- or 230-mm) diameter blades, depending on the make and model. There are two blade types: diamond tip or resin-bonded abrasive wheel.

Cutting paving slabs, kerb stones or other concrete or stone products produces enormous amounts of dust. This dust will contain some very fine dust called respirable crystalline silica (RCS). Exposure to RCS dust can cause serious health problems which may eventually prove to be fatal.

Health effects

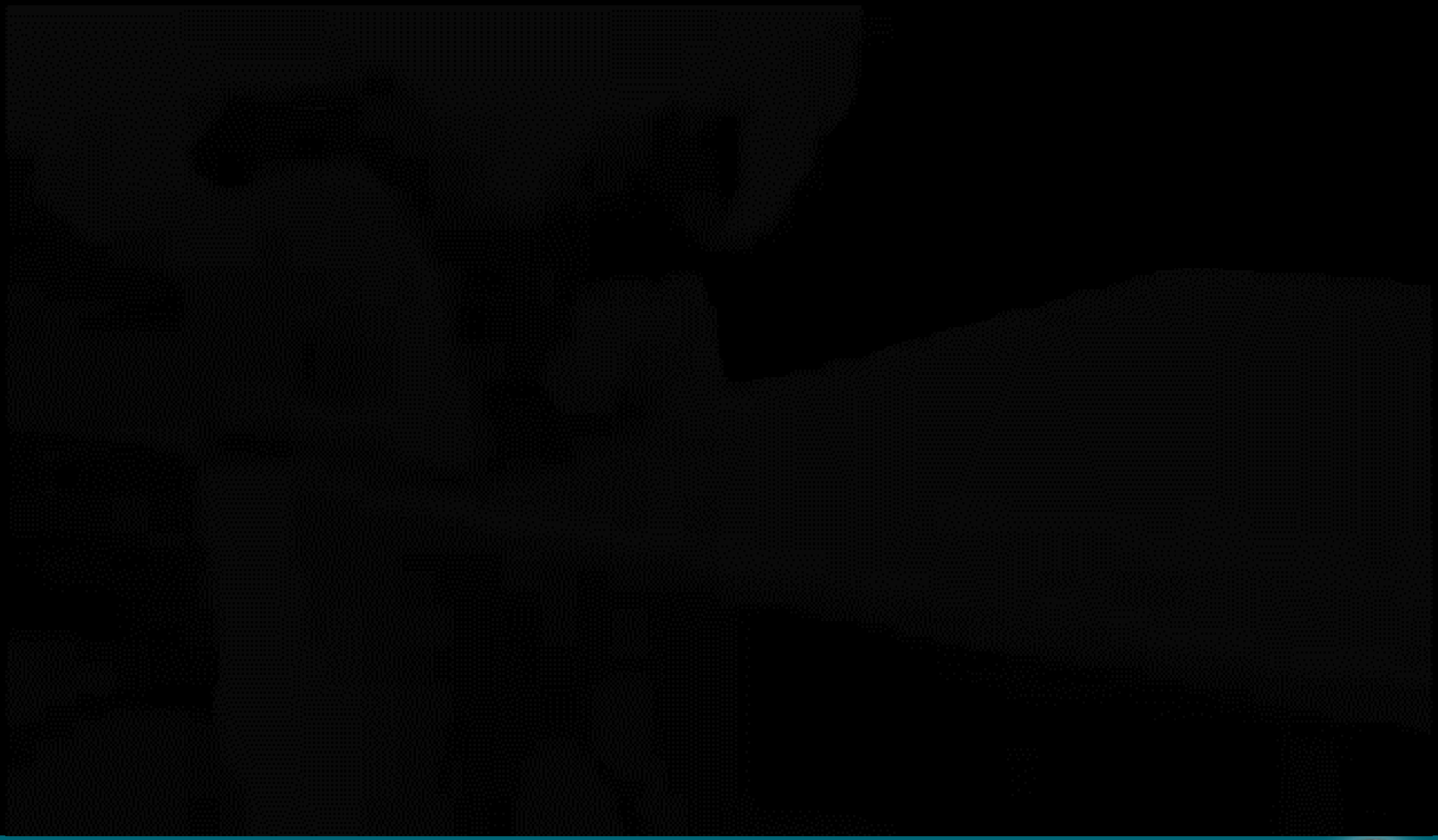
Stones, rocks, sands and clays can contain large amounts of crystalline silica and are used to make kerbs, flags, bricks, tiles and concrete. Cutting these materials produces airborne dust containing very fine RCS particles. These particles are small and it is not always possible to see the RCS dust in normal lighting.

Serious health effects, such as lung cancer or silicosis, can result from exposure to RCS. This is because fine RCS particles can penetrate deep into the lungs. Recent HSE-funded research[1] has suggested that over 650 construction deaths from silica-related lung cancer occurred in Great Britain in 2004. This estimate is based on exposures dating back to 1954. This equates to 12 construction workers a week and suggests silica is currently the second most important cause of occupational lung cancer after asbestos. Forthcoming work will look at predicting future estimates due to more recent exposure levels.

1 of 4 pages

Effective controls – Disc cutter

Effective controls – Wood working



Hierarchy of Controls

Elimination

Substitution

Engineering

Administration

PPE

RPE - Fit test vs Fit check.

The right specification (FFP3 / P3)

Fit Test - the responsibility of the employer

Required in all industries where tight-fitting facepieces are used as a control measure

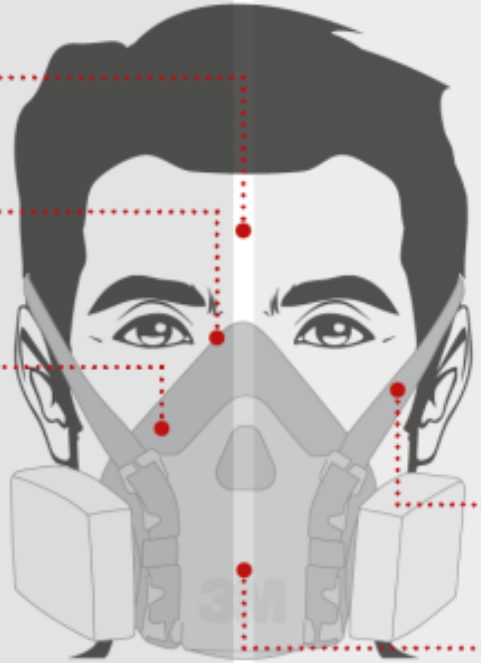
Faces can vary widely in shape, size and proportion, so selecting the correct model is vital for safe fit

Protection relies on achieving a good seal between the facepiece and the wearer's face

Tight-fitting respirators should be tested: disposable respirators, reusable half masks and reusable full-face masks

Fit Testing should happen during the initial selection of RPE, before being worn in a hazardous environment

The most common Fit Test methods are the Qualitative Taste Test and Quantitive Particle Counting Device



Fit Check - the responsibility of the wearer

The practice of the wearer checking their respirator for fit every time it is used

Work-related respiratory disease may be reduced when workers understand how to check that their device is positioned correctly

Fit Checking is not a regulatory requirement but should be regarded as good practice by the wearer

It is important for users to be trained in the technique required for their model of respirator

Following a successful fit test, the wearer is responsible for checking for fit every time the respirator is put on

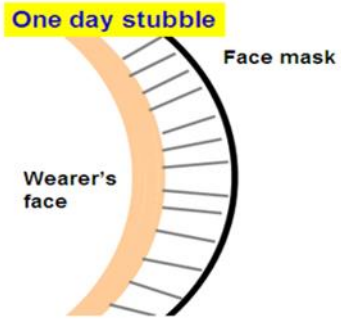
When fit checking, wearers use negative and positive pressure techniques to judge the quality of fit

ADEQUATE

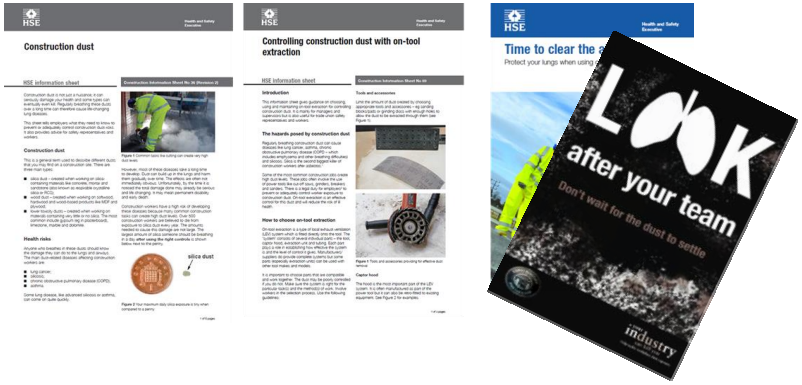
It is right for the hazard and reduces exposure to the level required to protect the wearer's health

SUITABLE

It is right for the wearer, task and environment, such that the wearer can work freely and without additional risks due to the RPE



CDP Resources.



Tool Box Talks
Guidance
Media downloads
Site Posters
FAQ's
Case Studies

Its not rocket science……

Its not rocket science……

If its on you ….

why take the hazard home?

We all have a responsibility
Together we can make changes.

For further support please visit :- www.citb.co.uk/cdp

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