

CONSTRUCTION DUST EXTENDED TBT

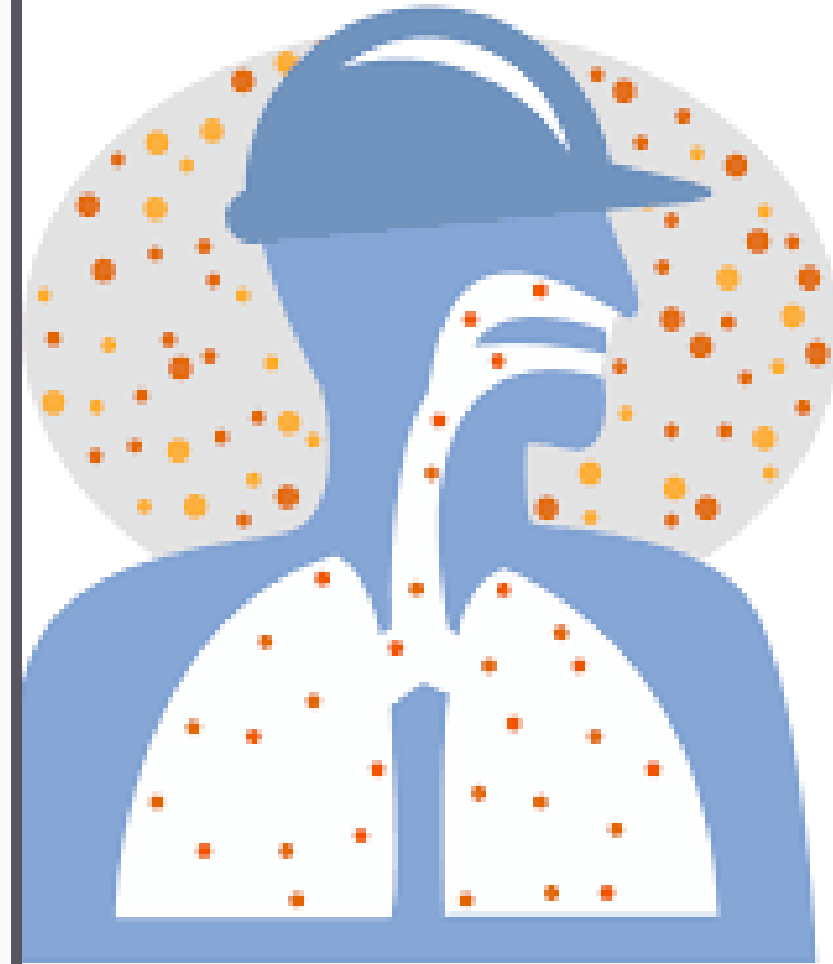
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M2 Safety Consultants Ltd



Contents

1. Introduction
2. What is respirable dust
3. Employers responsibilities
4. Employees responsibilities
5. Control Measures
6. PPE & RPE
7. Extraction & suppression of dust
8. Examples
9. Advice and support





HSE

Health & Safety Executive

Elimination

Substitution

Engineering
Controls

Administrative
Controls

PPE

1. Introduction

From 4th October 2021 the HSE will be targeting construction firms to check that their health standards are up to scratch during a month-long inspection initiative surrounding construction related dust.

The purpose of this extended TBT is to refresh employers, employees and those that are self employed on what we should be doing on site to mitigate and control exposure to dust.

Many of the areas covered in this TBT you will be carrying out already, but there might be areas where you will need to improve.

The HSE will visit any size of site and are not just targeting 'large' sites/ large contractors.

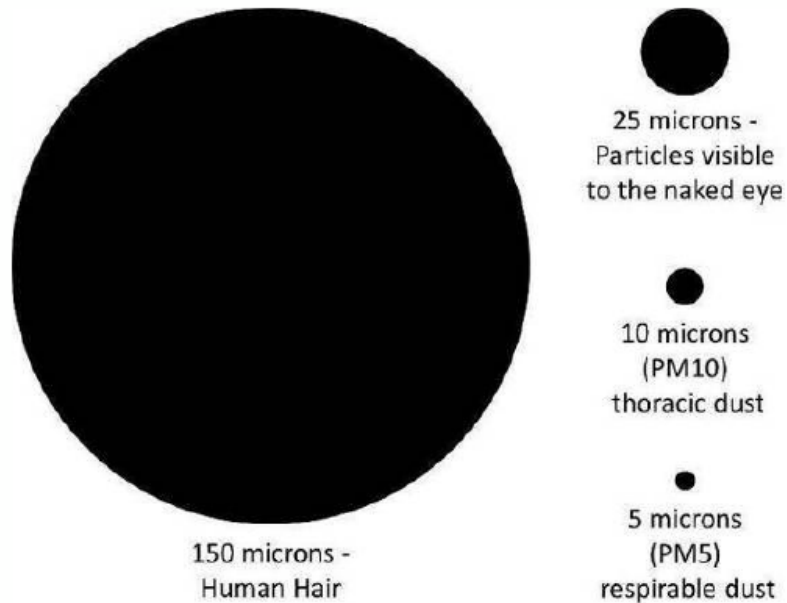
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2. What is respirable dust?

Respirable Dust

- Dust comes in different sizes



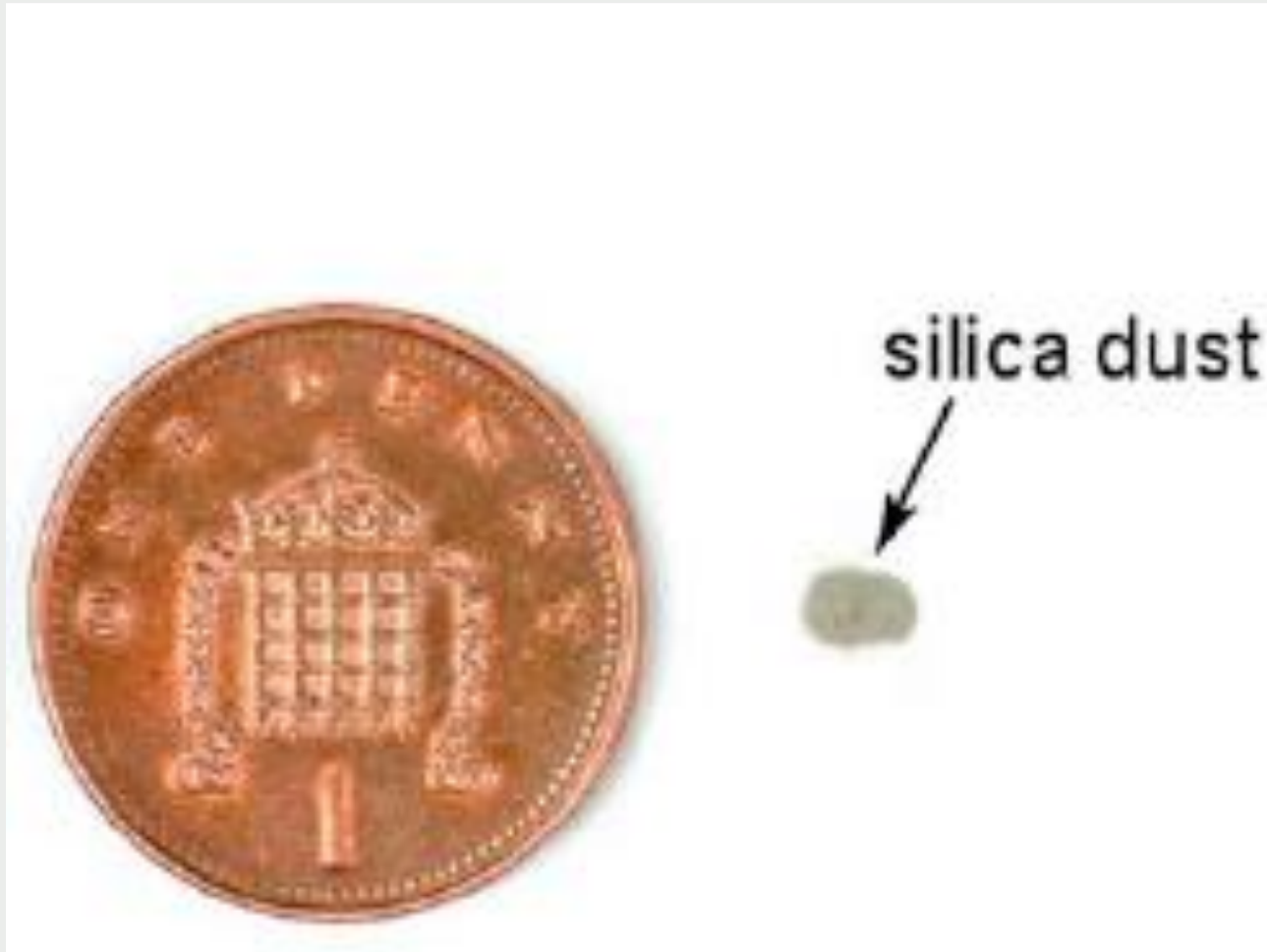
The picture to the left shows the differing sizes of dust particles compared to the thickness of our hair.

The dust we can see with the naked eye is 'large' in comparison to the dust which we cannot see with the naked eye.

This microscopic dust is what bypasses our natural filters (nose hair etc) and imbeds itself in our lungs which will then cause health problems which are irreversible.

Some health problems develop quickly – acute silicosis, asthma.

Regularly breathing small amounts adds up over the years and by the time you notice a problem, it may be too late to do anything about it.



The picture shows how the maximum amount of silica dust someone should inhale on a daily basis.

No one will be able to work out/actually calculate the exact amount inhaled in a day.

Therefore, it is impossible to know how much is inhaled.

By putting control measures in place we will greatly reduce the chance of inhaling any dust.

Dust

- Not all dusts are the same. Some dusts are more harmful than others. Excessive exposure to some types of dust has been linked to the development of particular health problems, such as lung cancer or asthma.
- The development of occupational disease can mean some workers experience life altering and in some cases premature life-ending illness. You can find more specific guidance on hazardous types of dust which are common in some industries, such as:
 - Silica, which is dust from rocks, sand, clay, bricks, concrete, etc
 - Wood

Silica Dust

- **Respirable Crystalline Silica (RCS)** found in varying amounts in most rock, sand and clay. Sandstone 70% Silica, Granite 15-30%.
- Silica major component in bricks, tiles, concrete and mortar
- Silica now recognised as **biggest Health Risk after Asbestos**
- Prolonged exposure to RCS can cause **lung cancer**, and lead to other serious respiratory disease :
 - **Silicosis** – usually follows exposure over a prolonged period of time
 - **Chronic Obstructive Pulmonary Disease (COPD)** – a group of diseases including bronchitis and emphysema

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 – **see later slides.**
- Hardwood dust can cause cancer, particularly of the nose.
- Settled dust contains the fine particles that are most likely to damage the lungs – dry sweeping would stir this up and expose others in the area.

Statistics / Facts

Occupational asthma

- According to reports from the chest physician reporting scheme for occupational respiratory disease, the rate of occupational asthma is 0.7 per 100 000 workers, average annual rates 2017-2019p).

Source: The Health and Occupation Reporting network (THOR) , annual average 2017-2019p

Chronic Obstructive Pulmonary Disease (COPD)

- There are various causative factors linked to COPD including occupational exposure to fumes, chemicals and dusts and environmental pollution. Smoking is the single most important causative factor.
- A recent analysis of COPD, based on the UK Biobank study, identified a number of occupations for which the prevalence of COPD was significantly higher compared with all other occupations.
- Within the construction sector, roofers were identified as being one of the occupational groups with a higher than the all occupation average prevalence of COPD.

Source: Work-related Chronic Obstructive Pulmonary Disease (COPD) in Great Britain, 2019



3. Employer's responsibilities

- You can take simple steps to stop this dust that will meet the law:

1. Ask yourself – do we need to cut materials? If not then no dust will be created.

2. Plan your work – work in a different way, limit the amount you cut or use non-powered equipment like block splitters;

2. Stop the dust getting into the air – see subsequent sections.

3. Use the right mask – see subsequent sections.

4. Assess the risk, put control measures in place, supervise and review – have a Safe System Of Work.





4. Employee's responsibilities

Employees must:

- To take care for your own safety and the safety of others who may be affected by your ACTS (things you do) or OMMISSIONS (things you fail to do i.e dig an excavation and fail to put up barriers around it).
- Co-operate with your employer with regards instructions on safe working practices.
- Do not to interfere with or misuse anything provided for health and safety i.e do not remove safety guards on tools.





5. Control Measures

PRE WORK QUESTIONS - PLAN

- Do you need to cut?
- Can we change the material – less toxic/ hazardous?
- Can we cut materials outside (well ventilated areas) or create a cutting area?
- Can we reduce the time we cut and how often we cut?
- Are all employee trained/ have suitable information for the task?



WORKING - DO



Ensure Safe System of Work (SSOW) in place (RAMS) – read and signed by employees.

Tools maintained and pre-use check of them.

Right tool for the works.

Blades/ discs are sharp.

Hoover/ extraction in place or enclosed cutting area (hoods).

Water suppression in place.

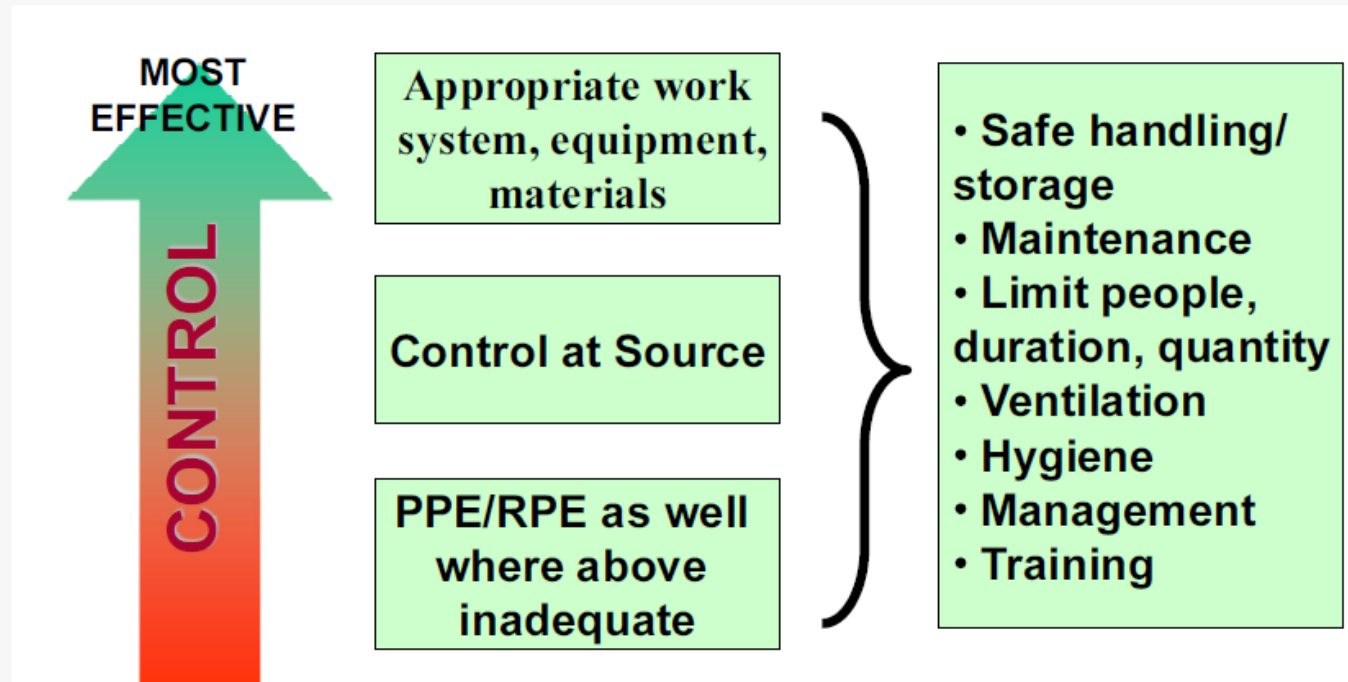
Correct PPE and RPE being used.

Limit the number of people in the area and rotate jobs (cutting).

Provide clothing that does not hold/ retain dust.

Supervise employees to ensure SSOW is being followed.

SUMMARY



- Note – PPE is the LAST consideration. All other means/ controls should be considered/ applied before PPE/ RPE.



6. PPE & RPE

PPE & RPE - General



Control measures not 100% effective – PPE & RPE still required.

Site minimum PPE required at all times.

RPE still to be worn when carrying out work even if on tool extraction in place.

Look after your PPE & RPE.

Always carry out a pre-use check – if defective get new PPE/ RPE before carrying out work.

RPE

- HSG 53 is HSE guidance document on RPE. Click [here](#) to view.
- Mask be adequate and suitable for the task.
- Numerous different types of face masks – consult M2 Safety if in doubt.
- Wearer must be face fit tested and carried out on a regular basis.
- Wearer of half masks must be clean shaven when wearing the mask.
- FFP3 masks afford the best protection of the disposable half mask respirators type and should be used over FFP1 and FFP2.
- FFP3 disposable half mask respirators
 - generally less than 1 hour continual wear
 - effective against liquid/ solid particles





7. Extraction & suppression of dust

ON TOOL EXTRACTION



- Ensure employees are trained in their use.
- Using the right hoover for the type of work.
- Carry out pre-use check for defects.
- Ensure PAT tested every 3 months.
- Regularly clean filters.
- Hoover is compatible with the tool.
- If tool has a captor hood ensure it is fitted correctly and cleaned on a regular basis.
- Use a H (high) or M (medium) filter hoover for the works.
- RPE will still be required as the hoover will not remove all dust.

WATER SUPPRESSION



- Ensure pressurized water bottle, hose, tool connection point and on tool water jet(s) are in good working order.
- Maintain tool and water bottle.
- If one person cutting and a second person is working the water bottle – both must wear suitable RPE.
- HSE recommend a minimum flow rate of 0.5 litres per minute (check manufactures specifications).
- Be aware of those around you when cutting.



8. Examples

| Task (example) : | Eliminate or limit the dust by (not full list – <u>PPE LAST CONTROL</u>): | Control the dust by using: (Note wearing of a mask is under an hour) |
|---|---|--|
| Cutting concrete kerbs, blocks and paving with a cut-off saw | <ul style="list-style-type: none"> Limiting the number of cuts during design/layout Using lower energy equipment like block splitters Getting material cut off site and delivered | <ul style="list-style-type: none"> Water suppression and Wear a FFP3 dust mask. |
| Cutting roofing tiles with a cut-off saw | <ul style="list-style-type: none"> Hand cutting natural/fibre cement slates and other tiles where possible Using ½ and 1½ tiles Correct setting out/design Minimising valleys/using dry valleys | <ul style="list-style-type: none"> Water suppression and A dedicated cutting area with scaffold board protection and Wear a FFP3 dust mask. |
| Occasional short-duration drilling with hand-held rotary power tools | <ul style="list-style-type: none"> Limiting the number of holes during design/planning Using direct fastening or screws | <ul style="list-style-type: none"> Where possible use equipment that stops dust getting into the air (enclosed hoods). The larger the holes the better this needs to be. Options range from: drilling through a dust ‘collector’ or using cordless extraction attached to the drill (for smaller drill bits) or on-tool extraction using an H or M Class extraction unit Otherwise wear a FFP3 dust mask. |
| Drilling holes with hand-held rotary power tools as a ‘main activity’ | <ul style="list-style-type: none"> Limiting the number of holes during design/planning Using direct fastening or screw. | <ul style="list-style-type: none"> Where possible on-tool extraction using an H or M Class extraction unit AND Wear a FFP3 dust mask. |
| Cutting wood with power tools. | <ul style="list-style-type: none"> Ordering pre-cut materials Using dedicated cutting areas (outdoors if possible) to minimise spread | <ul style="list-style-type: none"> On-tool extraction using an H or M Class extraction unit Wear a FFP3 dust mask. |
| Sanding wood with power tools | <ul style="list-style-type: none"> Using ‘pre-finished’ materials | <ul style="list-style-type: none"> On-tool extraction using an H or M Class extraction unit AND Wear a FFP3 dust mask. |
| Sanding plasterboard jointing | <ul style="list-style-type: none"> Using other finishes/systems Select boards with tapered edges to limit finishing needed | <ul style="list-style-type: none"> On-tool extraction using an H, M, or L Class extraction unit |

SWEEPING UP

- Try cutting outside/ areas that won't require to be swept/ tidied up.
- Dampen down area prior to sweeping.
- Limit the number of people in the area/ ask them to leave.
- Use a M or H rated hoover.
- FFP3 dust mask will be required – type will be dictated on length of task.
- Under no circumstances should dry sweeping take place on site.

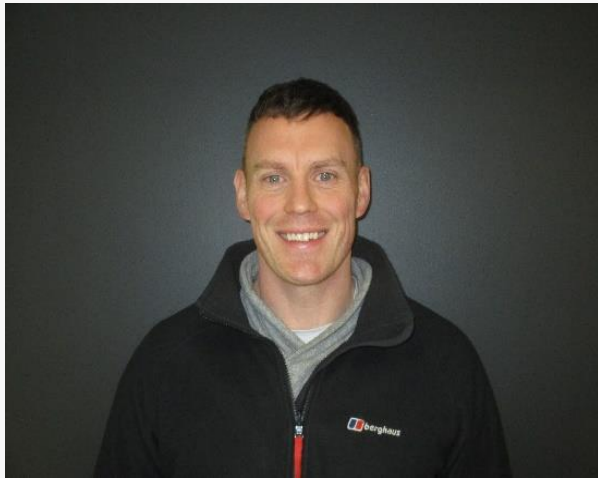




9. Advice & support

M2 Safety Consultants

- The following are contact details of Fraser and Ronny should you need any advice/ support or questions on this TBT.



Fraser Morrison tel. 077142204
email: fraser@m2safety.co.uk

Ron Murray tel. 07714 220203
email: ron@m2safety.co.uk

Further Info

Further information can be found by clicking on the links below:

HSE Information:

- [HSE Construction Dust](#)
 - [HSE Specific tasks – Dust Control](#)
 - [HSE Prevention of lung disease](#)
 - [HSE Silica Dust Information](#)
 - [HSE Dust Control & Cut Off Saws](#)
 - [HSE Wood Dust](#)
 - [HSE HSG150 – H&S In Construction](#)
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- [Construction Ill-health Statistics](#)

THANK YOU

