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Portable Transformer

The rules and procedures in force where people are at work may require the person responsible for this equipment to carry out a specific risk assessment.

It is important to read all of this leaflet

BEFORE you use the Transformer

1. Plan work ahead to ensure safe working at all times.
2. Electricity is dangerous and must always be used with great care.
3. The transformer is designed to reduce mains voltage to a lower, safer value. It can supply electricity safely up to its rated power.
4. Do not use it to do anything else – misuse or damage can cause electric shock or fire.

BEFORE STARTING WORK

1. Check the transformer case, plug and cable. Do not use if found to be damaged in any way – contact the hire company.
2. The transformer will get warm in use. Air vents in the case must be kept clear at all times. Make sure the heat from the transformer will not damage any floor coverings that it is standing on.
3. Do not use the transformer where there is a danger of explosion. It will ignite fumes from petrol or gas cylinders.
4. The transformer may switch itself off if it gets too hot. Allow the transformer to cool down and reset the trip switch before using again.

Continued overleaf...

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For guidance on managing construction health risks go to
www.hse.gov.uk/construction

BEFORE STARTING WORK *Continued*

5. Check the transformer's power rating against the power usage of the tools being used.

6. The transformer's rating will be shown on the case. "1kvA" means it can supply approx. 800 watts, "2kvA" means it can supply approx. 1600 watts. Check the labels on the tools to find their power usage.

7. The transformer can supply portable tools in normal use up to this power. The short pauses that are common when using a portable tool will prevent the transformer from getting too hot.

8. Distribution boxes can be used to supply two or three tools together, as long as their total power usage is less than the transformers power rating.

9. Equipment which uses power all the time, eg. Floodlights, may cause problems. The transformer can only safely supply about half its rated power to a continuous load like this.

10. The transformer and any cable connections should be in a dry and safe place. Ensure no vehicles will run over the cable.

11. Only use extension cables on the 110v side when working away from the 230v mains socket. The transformer should stay plugged directly into the 230v mains socket.

NOTE: When using a portable transformer to power heaters it is advisable to use a more suitable vented continuous transformer.

OPERATING QUESTIONS AND ANSWERS

Q. Why should I use a transformer at all?

A. The transformer reduces the voltage of the electricity supply to a much safer value. A shock from a damaged 110 volt cable or tool will be much less dangerous than one from a 230 volt supply. But the tool used must be made for use on 110 volts.

Q. What about residual current device?

A. You can use an rcd (residual current device) at the 230v supply to give additional protection on the 230v cable and transformer case (if metal). An rcd will not give protection on the 110v cable

Keep this leaflet in a safe place until work is finished as it may need to be referred to again.

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CAPTURE

Materials such as wood do not suit the use of water to suppress dusts so you must consider alternatives. Capturing the dust as it is released from the material being worked on is the only alternative to water suppression, but this must be done properly.

When purchasing or hiring your tools, consider whether it has the facility to extract dust 'on the tool', as this is the only way you can effectively capture the dusts as they are released. Some tools are fitted with dust bags, but these have only limited efficiency as there is no mechanism to actively suck the dusts out of the tool.

Always try to use a means that will remove the dust by suction.

PROTECT

Even the best control measures aren't going to prevent all dust being released, and it is for this reason that respiratory protective equipment must also be used. Dust masks are graded in three levels - P1, P2, and P3. You should always wear a P3 mask as only these offer the right levels of protection.

Even these aren't infallible so make sure you carry out a face fit test so you can create a tight seal against the face. Beards and stubble simply lift the mask off the face meaning dust can still get round the mask so be aware of this.

REMEMBER!

Exposures to dust won't lead to health problems until later in life. If you protect yourself now then you won't suffer in the coming years, but if you do nothing then by the time you feel the ill health effects *it will be too late.*

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WHAT IS DUST?

Dust can simply be described as particles in the air.

What dust consists of is purely down to what material is being cut, sanded or drilled as the physical action of your tools breaks off small parts of the material into the atmosphere.

The harm that it can do to you depends on what the material is, don't fall into the misconception that all dust does the same thing.

Specific materials which can do particular harm to you are wood, concrete and stone, but other materials have similar potential to harm you and the people around you.

You may well have heard of the terms inhalable and respirable dust before. This is simply a reference to how fine the dust you are breathing in is.

Different materials can affect you in different ways. In the same way the size of the dust can have different effects.

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WHY SHOULD I WORRY ABOUT IT?

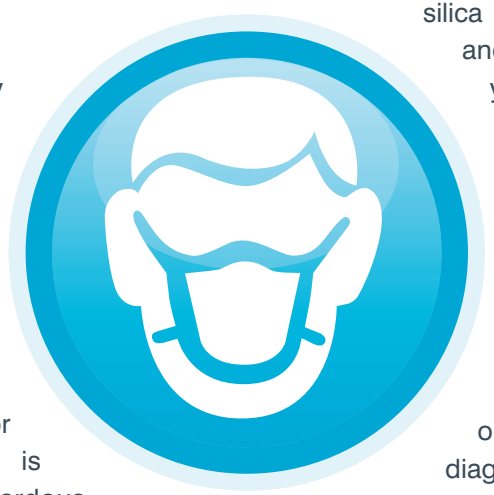
The effects of different dusts is well researched and well known. Unfortunately, the appreciation of this potentially deadly hazard in the workplace takes a back seat to the more visible hazards.

It would be very rare for anyone to suffer significant ill health through a single exposure to dust. The ill health symptoms rise from many repeated exposures to small levels of dust. Too many people think to themselves, "I'm only doing a quick job' or "what harm could this small bit of work do" and not do anything to protect themselves. It is these little exposures that add up over the months and years to give rise to serious ill health problems. Unfortunately by the time you feel that something is wrong, the ability for the illness to be treated is significantly diminished.

WOOD

Wood dust is a serious problem that people ignore at their peril. Just because it is a natural material that is in use throughout the world many believe that it is not particularly hazardous. Depending on the type of wood the dust from them can cause allergic reactions or cause cancers in the nose and lungs. Softwood dust is known to cause sensitisation – an allergic reaction, whereas hardwood dust is a known carcinogen. It's vital therefore that you take the right precautions against breathing in these dusts.

MDF



MDF is an industrially engineered form of wood, made from separated softwood and hardwood fibres. Because of this make up, it has greater potential to form particularly fine dusts when it is cut or worked on. MDF is particularly hazardous because it is made from both softwood and hardwood, and the fine dusts it produces increase the likelihood that dangerous amounts can be breathed in.

STONE AND CONCRETE

Stone and concrete contain a natural compound called silica. Like wood, it is used throughout the world, and most commonly we come across it as sand. Because it is so common people regularly disregard the effect it can have on us. The effect of irritation or burns from concrete are something that people working with the material may be familiar with, and this is because they see the effects fairly quickly. The effects of silica exposure are not quick and may take 10 to 30 years to become apparent, but rest assured they can and do arise.

Silicosis is a debilitating lung disease that occurs from exposure to silica. There is no cure once it has been diagnosed. It is caused by inhaling the finest silica dust (known as respirable crystalline silica) which is produced when concrete and stone is sanded, cut or drilled with power tools.

DUST

When you are breathing in dust that is not wood or silica does that mean its not going to have an effect on you? Non specific dusts can clog up the pathways in your lung leading to inflammatory responses in the lung, chronic bronchitis or chronic obstructive pulmonary disease (COPD). Around 4,000 people die each year from COPD in the UK from exposures people have had whilst at work. Remember that there is no such thing as general dust; it is always made up of many different compounds. All of these compounds have the potential to do you harm.

WHAT MUST I DO ABOUT IT?

Whenever you are doing an activity that creates dusts you have an obligation to protect yourself and the others working around you.

STOP

Stopping dusts being released should be your priority every time. If there is no dust, then there is no hazard to be exposed to. Damping down your process is the cheapest and most effective way of doing this as wet dusts form a slurry that cannot become airborne. Without any dust in the environment then not only are you reducing what you may breathe in, but you also have the benefit of less cleaning up to do afterwards.

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