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2011 Safety Guidance

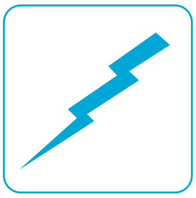
v:112016

Vp plc

110/230v Electricity

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 this entire leaflet BEFORE starting work



1. Electricity is hazardous and must always be used with great care.
2. Water and electricity make a very hazardous combination. Keep electrical equipment away from rain and water.
3. If you have not used electrical equipment before, familiarise yourself with the cables, plugs and sockets before connecting to the electrical supply.
4. Plan your work and think ahead to make sure you will always be working safely.
5. The following items of personal protective equipment is a minimum requirement: rcd if using a 230 volts (mains) supply.
6. Particular items of equipment or environments may require a higher level of personal protective equipment.
7. Electrical equipment must not be used by minors, or by anyone under the influence of drugs or alcohol.
8. Electrical equipment is designed for operation by an able bodied adult. Anyone with either a temporary or permanent disability must seek expert advice before using it.

Rcd should be:

- Installed in a dustproof and weatherproof enclosure (see the manufacturers' instructions) or designed for use in the dusty and outdoor environments;
- Protect against mechanical damage and vibration;
- Checked daily by operating the test button;
- Inspected weekly together with the equipment it is supplying during the formal visual inspections;
- Tested every three months by an electrician using appropriate electrical test equipment. Note: The tests should not be carried out on rcds at a time when loss of power may adversely affect other work activities.

2. Supply leads

Reduce the risk of flexible supply leads being damaged by:

- Positioning them where they are less likely to be damaged, (e.g., run them at ceiling height inside a building) : and/or
- Protecting them inside impact resistant conduit where appropriate; or
- Using special abrasion resistant or armoured flexible supply leads where appropriate.

3. Tools

Select tools that are designed for trade and work use. Double insulated equipment is strongly recommended where it is necessary to use a mains voltage supply, because the tools themselves are less likely to give rise to danger. (Danger can still arise, however, if the cables, plugs or equipment casing are damaged). Any restrictions on use set out in the manufacturers or supplier's instruction should be observed.

4. Checks

Regular maintenance checks should be made of all electrical equipment. These should include:

- Visual checks by the user each time the tool is used;
- Formal visual checks by a trained person on a regular basis.
- Combined inspection and testing by a trained person at suitable intervals depending on the risk of damage and the potential for injury;

USING ELECTRICAL EQUIPMENT

1. If a cable appears to be cut or damaged in any way, switch off and unplug at the mains before inspecting it. If the cable attached to a machine is damaged, stop using the machine. Contact the hire company. If an extension cable has been damaged, do not use it again.
2. Take care not to accidentally pull the plug from the socket.
3. Switch off and unplug before leaving the machine unattended.
4. If the equipment does not work properly, do not attempt to repair it. Contact the hire company.

Please keep this leaflet safely as it may be required for reference at a future date

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Before Starting Work...

WORK AREA

1. Do not use electrical equipment where there is a danger of explosion. It will ignite fumes from petrol, or gas cylinders.
2. Make sure that the area is clear and safe and that no-one is close by or could cause distraction.
3. Protect other people from any noise and dust the work may produce. Warn others to keep away, put barriers around the work area.
4. Keep electrical equipment away from rain and water.

OPERATORS

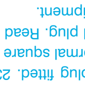
1. The following items of personal protective equipment (PPE) are the minimum that should be used whenever using electrical equipment. Particular jobs or environments may require a higher level of protection.
   - An rcd if using a 230v (mains) supply.

   Personal protective equipment appropriate to the machine / equipment being used will require to be worn.
2. Anyone who is working close by will also need to wear appropriate personal protective equipment.

EQUIPMENT

1. Check the equipment, cables, plugs and sockets. If anything is found damaged, do not use it – contact the hire company.
2. Check that the plugs and sockets on the cables match the supply. Do not try to force connections or improvise them.
3. Equipment with a cylinder yellow industrial plug fitted is designed to run off a special 110v supply. The hire company will have provided a portable transformer if the equipment is to be powered from a normal mains 230v supply. If a portable transformer has been supplied, take care not to injure yourself when moving it about – it may be heavier than you think. Equipment designed to run directly from 230v mains will have either a normal square pin plug fitted, or blue industrial plug.
4. The equipment will only operate on one voltage: it will be 110v or 230v. 110v machines will have a yellow industrial plug fitted. 230v machines will have either a normal square pin plug fitted, or a blue industrial plug. Read the instructions below for the equipment.

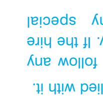
110 VOLT MACHINES (YELLOW PLUG)



1. If using a portable transformer, plug the transformer directly into the 230 volt socket. Do not use any 230v extension cables.
2. If an extension cable is required, follow any special instructions given by the hire company. If the hire company have not given any special instructions, only use a suitable rated heavy duty 110v extension cable, not longer than 50 meters (160 feet). An extension cable must only be used between the transformer and the machine.
3. Lay the extension cable out carefully avoiding liquids, sharp edges, doorways or windows where it might be trapped, and places where vehicles might run over it. Unroll it fully or it will over heat and could catch fire.
4. Make sure that any extension cable connections are dry and safe.

230 VOLT MACHINES (SQUARE PIN OR BLUE PLUG)

1. Use a residual current device ("rcd") plugged directly in to the 230volt socket. Plug the machine into the rcd. This will help to protect against electric shock if the cable or machine get damaged.
2. Use the "TEST" button to check that the rcd is working each time it is used. Reset the rcd according to the instructions supplied with it.
3. If an extension cable is required, follow any special given by the hire company. If the hire company have not given any special instructions, only use a suitable rated heavy duty one, not longer than 50 meters (160 feet). Plug in directly into the rcd.



4. Lay it out carefully avoiding liquids, sharp edges, doorways or windows where it might be trapped, and places where vehicles might run over it. Unroll fully or it will overheat and could catch fire.
5. Make sure that any extension cable connections are dry and safe.

USING 230V EQUIPMENT ON CONSTUCTION SITES AND OTHER SIMILAR ENVIRONMENTS WARNING

If 230v is selected for portable tools and equipment on construction sites, the risk of injury or death arising from the use of damaged or faulty equipment, leads or plugs is unacceptably high unless special precautions are taken. The precautions must reduce the risk to an acceptable level.

RISK ASSESSMENT

The HSE consistently recommended 110v systems as the best solution for reducing risk from portable, hand – held tools and transportable equipment. A risk assessment carried out by the planning supervisor (or other person responsible for health and safety on site) is likely to indicate that risk of electric shock is most effectively controlled by the use of 110v equipment.

PRECAUTIONS

Some suitable precautions are shown below. Some of these precautions can only be taken by the person responsible for providing the electricity supply on site. Other precautions, however, fall to you, the user.

1. Residual current devices protect people who may receive an electric shock by fitting non – adjustable residual current devices (Rcds) with a rated tripping current of 30 mA. Rcds should be installed either at the distribution board which feeds the mains supply sockets or at the fixed main supply socket. In either of these positions they will provide protection from faults in both the cable and tool. Rcds fitted close to the tool only protect from faults in the tool.