

# Electrical Safety

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## **Risk Assessment**

Initially you must assess the risks that will arise throughout the course of the work. (Further information on risk assessment is available in our guidance note 'Risk Assessment in the document library'). It is very important that you consider the type of environment where work is to be carried out. Risks will be increased where:

- work is done in wet conditions;
- work takes place out of doors;
- work is carried out in a cramped environment.

Certain types of equipment will also increase risk. For instance, extension cables and leads are easily damaged, and so greater care will need to be taken.

## **Control Measures**

### ***Training***

The greater the risks identified in your assessment, the greater the level of competency required in those carrying out the work. You may need to provide additional training to members of staff who could be qualified but not experienced in the particular area of work. The services of an electrician may be needed in situations that involve more complicated tasks such as repairs or alterations.

### ***Installations***

New electrical installations should be installed to a suitable standard (e.g. BS7671) and adequately maintained. All existing installations should be properly maintained and tested. (For further advice on maintenance and testing, please view our guidance note Electrical Maintenance and Testing in the document library). More sockets may be needed in order to avoid overloading.

### ***Suitable and safe equipment***

- Only equipment that is suitable for the job should be used;
- Maintain all electrical equipment in a safe condition;
- Replace damaged cables;
- Emergency cut-off switches in prominent positions may be needed. For portable equipment ensure that sockets are close by so it can be quickly disconnected;
- If work is to take place in a flammable atmosphere, electrical equipment should be designed to prevent ignition. Specialist advice may need to be sought.

### ***Reduce the voltage***

One of the most effective ways of reducing the risk is to use the lowest voltage needed to do the job. For instance, when powered tools are used, battery operated ones are usually safer. Also, portable tools can be bought which are designed to run from a 110 volts centre-tapped-to-earth supply.

### ***Safety devices***

Residual current devices (RCD's) can provide further safety when equipment is to be used at 230 volts or higher. They can detect many (but not all) faults in the system and switch off the supply. If an RCD is to be used you should remember:

- never bypass an RCD

- if the RCD trips, this may mean there is a fault;
- if it trips frequently when no fault can be found, consult the RCD manufacturer;
- the RCD should have a test button that you should use regularly.

### **Safe working**

There are some simple things that can be done to minimise risk such as:

- ensuring that suspect/faulty equipment is taken out of use and labelled “DO NOT USE”;
- switching off equipment before it is plugged in or unplugged
- making sure equipment is off prior to cleaning or adjustment.
- Work on/near live parts should never take place unless it is totally unavoidable and precautions have been put in place to ensure safety.

### **Underground/Overhead cables**

If work involves digging in the street or near buildings you should always assume that cables will be present unless you have information to establish otherwise. Service plans should be available from electricity companies and local authorities. You can also make use of cable avoidance tools and safe digging practice.

More than half of all fatal accidents due to electricity at work are caused by contact with overhead power lines. When working near them, it may be possible for you to arrange with the owner to have power turned off during the work. If this is not an option, you can still consult the owners for their advice regarding safe working distances. It should be remembered that electricity can flash over even if plant and equipment do not make physical contact with the lines.