

Enjoy the benefits of electricity but use it safely

Electricity is such a key part of modern living that we can often take it for granted. It is a powerful and versatile energy but can be dangerous if it is not used properly.

Most accidents occur either due to carelessness or a lack of awareness of some basic rules which should be observed in the use of electricity.

Using Appliances Safely

Always read the manufacturer's instructions carefully before you use a new appliance. The most vulnerable part of most appliances is the connecting flex and its associated plug. Most accidents associated with electric appliances are caused either by damaged or badly repaired flexes, or through wrongly-wired plugs.

Helpful DOs and DON'Ts

Flexes

- **DO** check flexes regularly for signs of wear, particularly on electric irons, kettles vacuum cleaners and portable tools.
- **DO** treat flexes with care; they are vulnerable to damage.
- **DO** make sure you have a long enough flex to comfortably work at an ironing board or when vacuuming without straining the flex.
- **DON'T** make joints in a flex, replace it with one of adequate length.
- **DON'T** repair a defective or damaged flex; replace it.
- **DON'T** use "bell-wire" or telephone/alarm wire for any mains-voltage appliances or connections.

Handling and using appliances

- **DON'T** drag an appliance by the flex nor pull on the flex to remove a plug from the socket.
- **DON'T** plug any appliance into a light bulb holder.
- **DO** note the maximum load allowed for a coiled extension lead - its rating is much lower with the cable fully wound than fully unwound. Many leads cannot safely handle electric heaters; they are only suitable for smaller appliances such as light portable tools.
- **AVOID** using multiple outlet adaptors; use fused multi-socket boards instead; better to have additional sockets fitted. **TRY TO AVOID** spaghetti-junction type cable connections behind music systems or computer equipment. Try to keep power cables separate from other connecting cables.

REMEMBER

If a plug shows signs of damage or defective operation - cracked or broken casing, signs of excessive heating, marked pitting of the metal contact - replace it without delay.

Kitchen Safety

Special care should be taken when using appliances in the kitchen, where the combination of electricity, water, trailing flexes and hot surfaces makes it potentially more dangerous.

The following DOs and DON'Ts will help to reduce the risk of accidents:

- **DON'T** have flexes trailing across either the cooker hob or sink.
- **DON'T** handle plugs or switches when your hands are wet; dry them first.
- **DON'T** wrap flexes around kettles, irons or toasters while they are still hot; the flexes may be damaged.
- **DON'T** clean or wash any appliance while it is still plugged in.
- **DON'T** try to release jammed toast from a toaster while it is still plugged in.
- **DON'T** line the grill pan with cooking foil; the foil could make contact with live terminals.
- **Do** unplug an electric kettle before filling it and make sure that the element is covered by the water.
- **Do** unplug a steam iron before filling it.

Electric deep-fat fryer

The main safety features of an electric deep-fat fryer are the thermostatic control that prevents the oil from overheating and the absence of a source of ignition.

To ensure that the thermostat continues to operate properly, you should remember to keep the air filter clean.

Electric Heaters

Wall-mounted panel radiators, portable fan heaters, convectors and oil-filled radiators are the safest heaters to use in bedrooms. Whatever heater you use keep it away from paper, clothing and curtains to avoid any risk of fire.

- Never drape clothes over heaters.
- Clean out fluff and dust from convector and fan heaters from time to time with a vacuum cleaner.

Workshop Safety

Garage, Workshop and Garden Safety

Garages and workshops usually have concrete flooring which increases the risk of electric shock. In addition, electric equipment and tools are generally more susceptible to damage here and in the garden than in other locations around the home.

Socket Outlets

If the building wiring is old, the sockets are less likely to be protected by a Residual Current Device (RCD: a device that detects the leakage of current from a circuit). If there is no RCD protecting the socket outlets then one should be installed on the garage circuit. If it can't be installed at the distribution board, a socket outlet incorporating an RCD can be fitted in the garage OR a plug-in type RCD should be used with all tools and outdoor equipment.

Portable hand lamps

When you need a portable light to work under the car, for example, or in the attic, use a specially-made hand lamp. This has a body of tough rubber or plastic, a guard to protect the lamp

and a tough flex. Never use a makeshift home-made lamp with an ordinary lamp holder and flex; it can be highly dangerous.

Hiring tools

When you hire in tools from a hire centre check the equipment before you take it home for the following points:

- Is the plug intact and the flex undamaged and firmly secured in the plug?
- Are there any exposed electrical connections?
- Make sure that the electrical loading is not excessive for a domestic installation.
- Select tools operating at 110 volts from a step-down transformer (a device that changes a voltage from a higher to a lower value) for greater safety.

Working out of doors

Special care is needed when using mains-operated (240Volt) appliances such as a lawnmower or garden tools out of doors. That's because the user is in direct contact with the "earth" and is in greater danger of serious electric shock if a fault develops in the appliance.

Choosing appliances

When buying equipment or tools for use outdoor, choose 'all-insulated' or 'double-insulated' equipment. This will provide a greater degree of protection than equipment which requires 'earthing'. Double insulated appliances are indicated by this symbol.



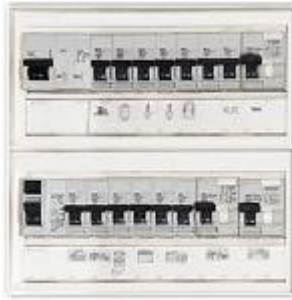
Tools designed to operate at 110 Volts or less, through an appropriate transformer, will provide extra protection. Always use a plug-in RCD (Residual Current Device) unit or an RCD plug top for outdoor equipment if the socket circuits are not protected by an RCD on the distribution board.

General advice when using tools and garden equipment:

- **Do** Check appliances, flexes and plug-tops before use
- **Do** Replace a damaged flex or plug- top don't repair it.
- **Do** keep trailing flexes well clear of cutting edges of lawnmowers, hedge trimmers and electric saws.
- **Do** unplug a lawnmower or hedge-trimmer before removing grass or debris from the blades.
- **Do Not** extend a flex by jointing or with home-made plug and socket assemblies; Buy one of adequate length for outdoor use or use approved extension reels.
- **Do Not** leave appliances or tools unattended when they are plugged in.
- **Do** wear stout rubber boots when using appliances in the garden; gloves also give added protection.
- **Do** follow manufacturer's instructions regarding the use of protective clothing, goggles or footwear
- **Do** treat all powered cutting tools with care.

Fuses and MCB's (miniature circuit breakers)

The distribution board (or fuse board) contains the MCB's or fuses which



protect individual circuits that carry electricity to your sockets, cooker, lights etc. These circuits have different size wires (large for a cooker, small for the lights) and, for this reason, have different strengths of MCB's or fuses protecting them. The strength is measured in Amps and will be clearly marked on the MCB or fuse.

An MCB or fuse is a safety device which cuts off the flow of electricity to a circuit if a fault in the circuit or in an appliance causes an overload. An MCB can be reset when the fault is identified and repaired; a blown fuse must be replaced with one of similar strength.

Above: Typical MCB distribution board

MCB's

Most modern installations will have MCB's fitted instead of fuses. They are more convenient to use. When the fault/overload which caused the MCB to switch off is located and remedied the MCB is reset to the upward ON position.

Fuses

It is most important when a fuse fails that it is replaced by one of the same strength and NEVER by a stronger one