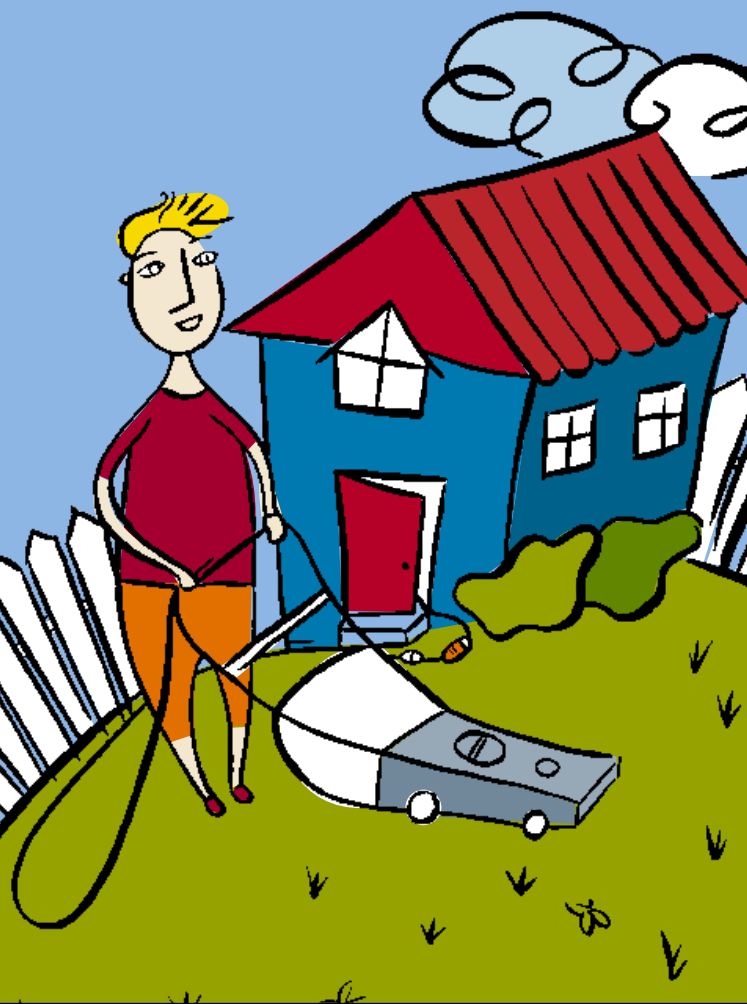


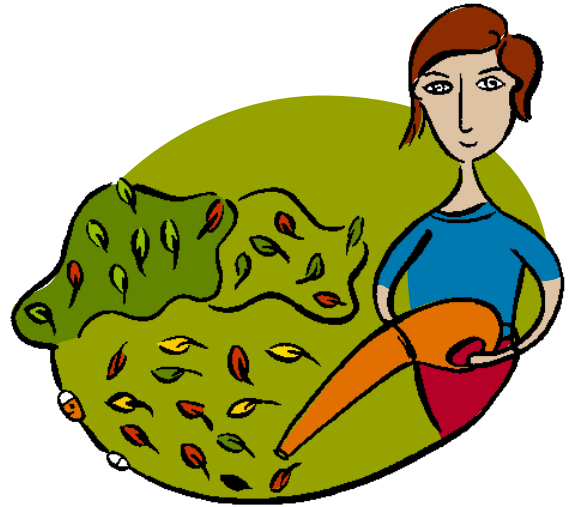
# Residual Current Devices

## Switching on to Safety



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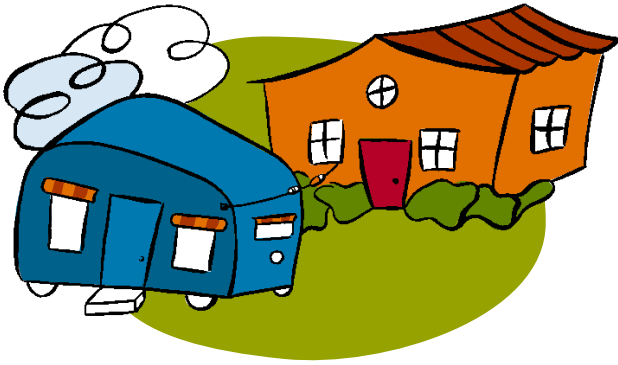


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## What is a Residual Current Device?

Residual Current Devices (RCDs) are to the electrical industry what seat belts are to the motor industry. An RCD is an electrical safety device that provides protection by rapidly disconnecting the electricity supply in many situations where someone could otherwise receive a fatal electric shock. An RCD offers a high level of personal protection.



RCDs constantly monitor the electric current flowing along a circuit. If someone touches a live wire or faulty appliance, causing the current to flow through their body to the ground, they could receive a severe electric shock or be electrocuted. If an RCD senses any loss of current, where electricity is diverting to the ground rather than through the circuit, it will very quickly shut the electricity off and therefore reduce the chance of serious injury.

Water is a good conductor of electricity - if you are wet and in contact with the ground, it is even easier for electricity to flow through you. RCDs offer excellent protection in damp areas of your home where there are electric fittings, and when working with electrical equipment outside.

## Types of RCDs

There are three types of RCDs; switchboard RCDs that are wired into your switchboard, socket outlet RCDs that can be installed to replace standard socket outlets (power points), and portable RCDs that can be moved from place to place and are ideal to use when working with electrical equipment outside.

An RCD installed at the switchboard is often the best option as it protects all the electrical wiring and appliances plugged into that circuit. Discuss the most suitable option for you and your home with a licensed electrician.

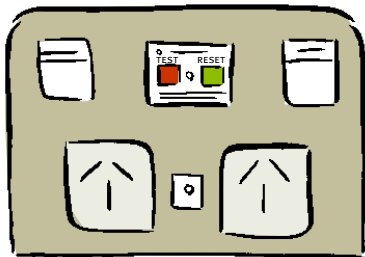
### Switchboard RCDs

These are installed at the switchboard to provide protection of selected circuits or groups of circuits. A switchboard RCD is the best option in most situations, as it protects all the electrical wiring and appliances supplied from that circuit. **The law requires these to be installed only by a licensed electrician or electrical inspector.**



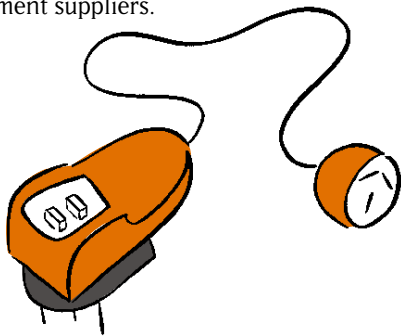
## Socket outlet RCDs

These are RCDs that are built into standard socket outlets (power points) to provide protection to equipment plugged into that outlet and, if required, downstream protection of other outlets. It is a legal requirement for bathrooms and other damp areas to be electrically safe and it is common practice to use socket outlet RCDs to achieve this. The Ministry of Consumer Affairs' Energy Safety Service recommends that these are installed by a licensed electrician.



## Portable RCDs

These are RCDs (often incorporated into an extension cord) that plug into socket outlets (power points) and then an appliance or extension cord plugs into them. The RCD can be moved from socket outlet to socket outlet as needed. These are very useful when using electrical equipment (such as electric lawn mowers and power tools) outside or in a damp environment. It is very important to use an RCD when working with electrical equipment outside. It is all too easy to accidentally slice through an electric cable. Portable RCDs can be bought at hardware shops and electrical equipment suppliers.



## Important

RCD protection **minimises** the risk of serious electric shock. It does not eliminate that risk. The best safety protection is safe behaviour. If you think there is an electrical fault with your house's wiring or with an appliance, then stop using it immediately and have a licensed electrician check it out.

## Changes to the Electricity Regulations 1997

Changes to the Electricity Regulations 1997 are being implemented by the Energy Safety Service to improve safety. From **January 2003**, all new circuits originating at the switchboard supplying lighting or socket outlets (power points) in domestic buildings must have RCD protection. Residential facilities (such as boarding houses, hospitals, hotels and motels) will also require RCD protection for all new circuits originating at the switchboard supplying socket outlets. These RCDs will normally be located at the switchboard. They will provide protection for all electrical wiring and appliances plugged into the new circuits.

This will improve the safety of people living in these properties and bring New Zealand's electrical safety requirements further in line with Australian and international practices.





The legal requirement for damp areas to be "electrically safe", still remains. This can be achieved by switchboard mounted RCDs or socket outlet RCDs.

If the RCD is installed at the switchboard, make sure your licensed electrician issues a Certificate of Compliance. It is your assurance that the work complies with safety standards. You may also need this for guarantee purposes and if you want to sell your home later on.

In addition, you should ask your licensed electrician to show you where the RCDs are installed and how to test and reset them.

The Energy Safety Service and the Electrical Workers Registration Board will monitor compliance with the new safety regime as part of their enforcement responsibilities under the Electricity Act 1992.

### Advantages

As the proportion of New Zealand's RCD-protected homes increases, the additional RCD protection is expected to save two lives a year and prevent more than ten injuries. Additional RCD protection should also reduce property loss caused by electrical faults by more than \$3.5 million per year.

### Testing Your RCDs

You can test your socket outlet or portable RCDs by plugging in a small electric appliance (such as a night-light). Press the "test" button. If the appliance turns off, the RCD is working. If it stays on, get your RCD checked by a licensed electrician. Make sure you press "reset" once the test is complete. You should test these RCDs regularly e.g. every three months.

It's a good idea to test switchboard RCDs every six months by checking that it trips when the "test" button is pushed. However, be aware that tripping circuits will turn off the power to any appliances on that circuit. So appliances with electronic clocks will have to be reset. For this reason, it's a good idea to test your switchboard RCDs when changing to and from daylight saving - when clocks have to be reset anyway and it will be about six months since the RCDs were last tested.



## How can I find out more about energy safety?

The Energy Safety Service's website [www.ess.govt.nz](http://www.ess.govt.nz) has copies of publications for the safe use of electricity and gas as well as access to the Acts, Regulations and Codes of Practice.

You can also contact the Energy Safety Service at:



Email [info@ess.govt.nz](mailto:info@ess.govt.nz)

Phone 04 472 0030, Fax 04 460 1365

PO Box 1473, Wellington

[www.ess.govt.nz](http://www.ess.govt.nz)

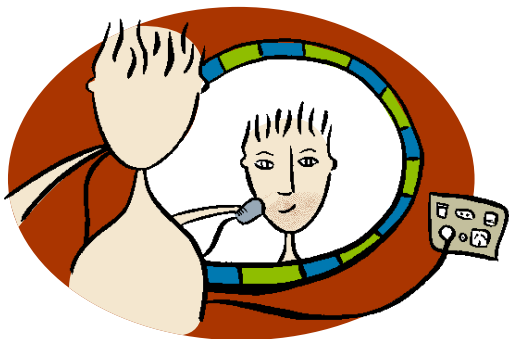
You can contact the  
Electrical Workers Registration Board at:



Freephone 0800 66 10 00

Phone 04 472 3636, Fax 04 473 2395

[www.e wrb.govt.nz](http://www.e wrb.govt.nz)



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