RCD Testing

Residual Current Device (RCD) Testing requirement for electrical equipment under AS/NZS 3760:2010 & AS/NZS 3012:2010 standards. On this page you will find all the information that you need to know to position yourself to ensure that your site is compliant with the appropriate regulations.

If you have any questions at all please feel free to contact us via 1300 038 847 number or the online enquiry form on this page, as we are here to help.

Got Questions?

We're here to help

1300 038 847

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What are the testing intervals?

Construction & Mining – RCD Testing to be carried out to AS/NZS3012:2010

RCD Operating Time (RCD Tester)

- Non- Portable -Fixed RCD's – 12 monthly tests for operating time by qualified person
- Portable RCD's – 6 monthly tests by qualified person

RCD – Push Button Test (by user)

- Non- Portable -Fixed RCD's – 6 monthly push button test by user
- Portable RCDs – To be tested daily, or before connection of electrical equipment by user

All other workplaces to AS/NZS 3760:2010

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- Portable RCDs – 6 monthly test by qualified person

RCD – Push Button Test (by user)

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- Portable RCDs – To be tested daily or before connection of electrical equipment by user

What is a RCD?

A RCD (Residual Current Device) is a safety device that disconnects a circuit when it detects an imbalance of the electric current. The RCD turns the power off almost immediately to prevent electrocution. While you may still receive an electric shock, the duration will be very short, reducing the risk of serious injury.

Where electricity is supplied through a socket, the risk associated with that supply must be minimized by the use of a RCD.

A RCD cannot detect all types of faults, for example if a person receives a shock between the active and neutral conductors. However these circumstances are rare and the vast majority of incidents occur between the active conductor and earth, which is protected by a RCD.

If a person comes in contact with a live electrical conductor, electricity flows through their body, causing an electric shock. Effects can vary from a tingling sensation or muscular pain to breathing difficulties, burns, and heart failure.

RCDs are extremely sensitive, disconnecting within 10 to 50 milliseconds of detecting a leakage current. This is usually lower for domestic residences, but may be lower in other locations such as hospitals. This stops the flow of electricity through someone’s body to earth. Importantly, this response time is much faster than the critical section of the cardiac cycle, and therefore reduces the risk of death or serious injury.

RCDs also protect against fire caused by faults in appliance, tools and

wiring. If these faults go undetected they could cause a fire, or personal injury. RCD's provide a means of early fault detection.

"Also see Thermographic scanning for risk management on your electrical switchboards."

Why test RCDs?

The majority of electrical fatalities could have been prevented by the use of a properly installed RCD, and regular testing to ensure they are working correctly.

RCD's also protect against fire caused by faults in appliance, tools and wiring. If these faults go undetected they could cause a fire or personal injury. RCD's provide a means of early fault detection.

By law most work places have a Residual Current Device (RCD) Testing requirement for electrical equipment under AS/NZS 3760:2010 & AS/NSZ3012:2010 standards.

What is the difference between "circuit breakers", surge protectors and RCDs?

Circuit Breakers and fuses are designed to protect electrical cables and fittings, installed in premises from overloading and short circuits. They cut the power when electrical wiring in the premises has too much current flowing through it. They are designed to prevent electrical fires, not electrocution.

Some Meter Boxes have surge protection fitted to safeguard appliances against a spike in electrical voltage, such as a lighting strike. Some power boards or extension leads also have surge protectors fitted. These

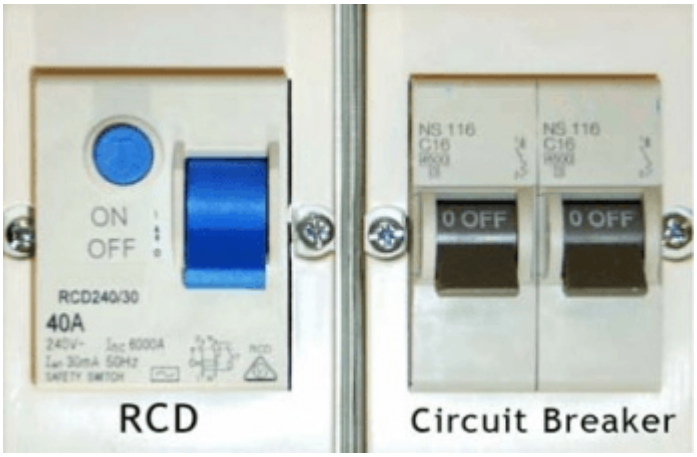
devices do not offer any protection against electrocution.

Only RCDs will prevent electrocution by cutting the power to a circuit in the event of an earth leakage.

This why you need to ensure that your RCDs are regularly tested.

What are The Different Types of RCDs?

How do I tell the difference between a RCD and a circuit breaker?



A RCD looks like a circuit breaker, but also has a test button. The photograph shows two circuit breakers compared with a RCD **(note the test button)**. Combined RCD/circuit breakers are available also. These devices provide protection from overload, short circuit and electrocution. They also have a test button.

Portable RCDs

Portable RCDs attached to a power board or extension lead are available. RCDs on power boards and extension leads only protect the circuits of

appliances connected to them. They are essential for people using power tools or electrical appliances outside that are not protected by a meter box RCD or power point RCD.

Power Point RCDs

RCDs may be fitted to a power point, and can be distinguished by the test button on the faceplate. They must be fitted to the first power point after the meter box. They are suitable for protecting electrical appliances in specific areas such as bathrooms and workshops.

What flexibility is allowed with the testing intervals?

In order to remain compliant to the standard, you will need to comply with the above test intervals in the section above.

There is a tolerance of 2 weeks allowed from renewal date for you to still achieve compliance.

One of the most common problems that we see in your industry is that

everyone is busy and it’s very easy to miss these dates and not be compliant with the standards. We can help you by taking care of this responsibility for you. The Ettis team will send reminders of your RCD renewal coming due, several weeks before the renewal is due, to ensure you are always compliant at your premises.

Do I have to test RCDs of a building we are renting?

Yes as the employer or person having control of the workplace it is your duty to ensure that RCD are regularly tested.

The specific details of which legislation applies:

Construction & demolition sites

- Regulation 3.60 of the OSH regulations requires that all RCDs be kept in a safe working condition & tested regularly
- Regulation 3.61 of the OSH Regulations requires the employer, self employed person or main contractor at a workplace to ensure compliance with Australian Standards AS/NZS 3012:2010 Electrical Installations – Construction and Demolition sites
- Regulation 3.62 of the OSH regulations requires the portable RCD on any construction site or demolition to be carried out by a competent person

- Regulation 3.63 of the OSH regulations, states that any worker bringing a portable RCD to a construction or demolition site, that is required to be tested under AS/NZS 3012:201, must before the item is used:

Provide the main contractor with a record of the relevant testing data of the portable RCD being tested

All Other Workplaces

- Regulation 3.60 of the OSH regulations requires that all RCDs be kept in a safe working condition & tested regularly
- Regulation 4.37 of the OSH regulations deals with the duties as to the use of RCDs at workplaces, other than construction, demolition sites, and mining operations. Under this regulation, an employer, self employed person or person having control or access to a workplace must ensure that electrical equipment and RCDs at the workplace are subject to the appropriate checks, tests, and inspections necessary to reduce the risk of injury, or harm occurring to a person at that workplace.

What compliance reporting is required?

The following documentation must be kept for all RCDs:

- Register of all equipment
- Record of formal inspection & tests
- Repair register
- Record of all faulty equipment showing details of services & corrective action

The RCD Test Results:

- Testers name who carried out the test
- Date testing carried out & re-test date

- Result from testing – Pass/Fail
- License no. of the electrician or certificate no. of the competent person carrying out the testing
- Asset Id No of the items tested

Making your compliance reporting easy for you

- If you have to update, maintain and store all these records yourself, it can be quite a responsibility, and yet another task that you need to do on top of your already busy schedule.
- The team at Ettis have this record process very systemised, streamlined and efficient. All records are stored securely digitally. We can store your records for you to make the whole process more efficient for you.

Who may test RCD's?

The test for the operating time of a RCD requires specific technical expertise and interpretation of results and, therefore, can only be carried out by an appropriately qualified or trained person. This means a licensed electrician or a person who has successfully completed a competency-assessed training course in the use of a RCD tester.

Fixed RCD Testing

Can be carried out by a competent person, but they cannot carry out repairs, or remove the cover of the switchboard exposing live terminal, as only a licensed electrician can.

We suggest that you should only use a licensed electrical worker trained on the test equipment

ETTiS use qualified electricians to carry out RCD Testing

Ettis utilize the latest test equipment to test RCD's which not only performs the recommended RCD tests, but also records the trip time

results, allowing us to provide accurate record management.

Push-button test

Any person can perform the push button test; however before that person performs the test they must be deemed competent.

See our video & attachment with how to carry out the push-button test on your fixed RCD & portable RCDs.

If the RCD fails to operate a licensed electrician needs to be engaged to test the RCD and replace if necessary.

Portable RCDs to carry out operating time test this requires the use of an isolation transformer.

Construction and demolition sites

The tests on RCD's must be carried out by a competent person, in accordance with the requirements of AS/NZS 3012:2010 and each test must be recorded.

Mining sites

Where a portable RCD is used a minimum, the employer must ensure that it is kept in a safe working condition, and tested on a regular basis by a competent person; and

where a non-portable RCD device is installed at the mine, the employer must ensure that each device kept in a safe working condition, and tested on a regular basis by a licensed electrician.

All other workplaces

Where a portable RCD is used at a workplace the employer, self employed person or main contractor at a workplace, the person with control of a workplace must ensure that it is kept in a safe working condition and tested regularly by a competent person.

How are RCDs Tested?

When RCD tests are carried out, it will trip the RCD and disconnect the circuit that it protects, so any electrical equipment will need to be turned off prior to RCD Testing being carried out. Each RCD Test only takes approximately 5 minutes for each RCD. We suggest that RCD Testing is carried out after hours, before the office opens, or you will need to advise your staff that the power will be disrupted for each circuit, and that there computers will need to be turned off.

All electrical equipment needs to be turned off when RCD Testing is carried out

Operating Time Test

Performed by an electrician, this test measures how long the RCD takes to trip, indicating whether it is fast enough be effective.

Push-button Test on RCDs

The push-button test is to ensure that the RCD will trip when there is an earth leakage, and break the electrical circuit protecting the individual from suffering an electric shock, or electrocution. When you press the test button, and the RCD has detected an imbalance, the on/off switch will jump to the “off” position.

The test button will only test the RCD if an electricity supply is connected.

This is a simple test that can be performed by the user, to determine that the RCD’s tripping mechanism is working.

The reason for the push button test is to ensure that the RCD will trip when there is an earth leakage and break the electrical circuit protecting the individual from suffering an electric shock or electrocution.

Portable RCDs

Portable RCDs requires the use of an isolation transformer to carry out operating time test.

Why do my RCDs trip out – nuisance tripping?

Some electrical appliances and old wiring may have a normal small amount of earth leakage which can trip a RCD.

Earth leakage increases with each additional electrical appliance that is plugged in, and if RCD keeps tripping out it may be an overloaded circuit. Any faults we recommend that you have your wiring and appliances checked by an electrician to ascertain the fault if a RCD keeps tripping.

Your next steps:

So that we can best assist you and your business with your compliance needs, please contact us on 1300 038 847. We can also provide you with a copy of the relevant testing standard for your industry and equipment.