

For safety reps: What equipment needs RCD protection?

Depending on the type of installation, RCD protection may be provided by either a portable or fixed (non-portable) RCD. Examples of equipment that needs RCD protection:

HAND HELD ELECTRICAL PLANT

- power tools, such as drills and saws
- hair dryers, curling wands, electric knives

ELECTRICAL PLANT WHICH IS MOVED DURING OPERATION

- jackhammers, electric lawn mowers
- vacuum cleaners and floor polishers
- extension cords

PLANT WHICH IS MOVED BETWEEN OPERATION WHERE DAMAGE TO PLANT OR THE SUPPLY CORD COULD REASONABLY OCCUR

- electric welders, electric cement mixers, portable bench saws
- extension cords

WHERE ELECTRICAL SAFETY COULD BE AFFECTED BY THE OPERATING ENVIRONMENT

- appliances used in wet areas such as kettles, jugs, frying pans, portable urns, food mixers/blenders
- extension cords.

When fixed (non-portable) RCDs are installed, all the socket outlets are usually protected automatically. When modifications have been made to an old or existing installation, it is possible that only the modified circuits will be protected by the RCD. To overcome the risks of working with partially protected installations and ensure maximum protection, consider providing RCD protection to the entire installation.

OTHER EQUIPMENT

Not all equipment requires RCD protection; however, to maximise workplace safety it is recommended that RCDs be fitted wherever possible.

Equipment generally not considered to require RCD protection includes equipment that is 'plugged in' to a socket outlet but is not intended to be:

- moved while in operation
- frequently moved from place to place
- used in a 'heavy use' environment.

Examples of this type of equipment include:

- desk-top equipment such as computers, printers, monitors, clocks, desk lamps
- photocopiers
- refrigerators
- wall mounted air-conditioners
- specialised scientific equipment where the use of an RCD may compromise the operation of the equipment or the safety of a patient. (However, steps should be taken to ensure a high level of safety is maintained such as a more frequent and extensive testing program.)
- 'fixed' machinery that is connected via a flexible lead and plug in order to facilitate

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maintenance. (It may be moved during maintenance but is otherwise fixed. The supply lead must be installed and connected so that it is protected from any possible damage.)

- extra low voltage equipment (less than 50 V AC), direct current systems, equipment operated from an unearthed generator, and equipment supplied from an isolator transformer.

Where it is not obvious whether RCD protection is required, a risk assessment should be conducted.

The requirement for an RCD is not determined by the type of equipment alone, but is dependent also on the environment and location in which the equipment is to be used.

For example:

- equipment on construction sites is subject to heavy use and therefore must be RCD protected
- equipment in wet areas (such as kitchens) has a higher risk of causing electric shock and therefore should be RCD protected.

[source "Safework SA - Electrical Safety Booklet"](#)

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