

# Electrical Safety Outlook

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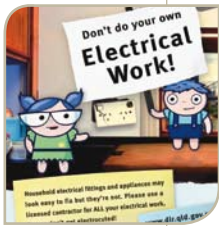
## New safety switch regulations for rental accommodation

A new regulation will come into effect on 1 March 2008 requiring owners of domestic rental accommodation in Queensland to install a safety switch in all properties that do not currently have one.

The safety switch must be installed by a licensed electrical contractor.

The new regulation ensures people in rental properties have the same protection from electric shock that homeowners have enjoyed since the installation of safety switches became a requirement in all new homes in 1992.

This was extended in September 2002 to require the installation of safety switches within three months of the sale of a domestic residence constructed prior to 1992.



Welcome to the first edition of the Electrical Safety Outlook newsletter.

Electrical Safety Outlook is a publication produced for electrical licence holders and others involved in the industry. It provides news and practical information about our industry on a range of topics from policy development to dealing with asbestos on the job.

Electrical Safety Outlook will be published four times a year and you can get your copy more quickly by subscribing to the e-version at [www.deir.qld.gov.au](http://www.deir.qld.gov.au).

We welcome your comments and input.

Peter Lamont  
General Manager, Electrical Safety Office

The introduction of the laws has meant that Queenslanders are protected from injury or death when coming into contact with electricity.

Safety switches can save lives by detecting electrical faults when they occur, by disconnecting the electricity before enough current has passed through a person to cause harm.

For more information and a copy of the regulations visit [www.deir.qld.gov.au](http://www.deir.qld.gov.au) or call 1300 650 662.



# Safety switches in manufacturing industry

A new regulation also means that from 1 March 2008 all manufacturing workplaces must have a safety switch protecting all specified electrical equipment.

This new regulation ensures that everyone in a workplace is protected from injury or death, and that equipment and facilities are protected from property damage.

An employer or self-employed person may be exempt from this requirement if:

- they are not the person in control of the electrical equipment to which the safety switch is to be installed
- they have been unable to obtain permission from the person in control of that equipment.

For more information and a copy of the regulation visit [www.deir.qld.gov.au](http://www.deir.qld.gov.au) or call 1300 650 662.

# The importance of electrical safety after flooding

Inspectors from the Electrical Safety Office (ESO) have investigated a number of cases where people have received electric shocks from equipment that has been in contact with water.

With Queensland's summer storm season here, the chance of equipment being flooded increases. Because of the risks, the ESO is urging Queenslanders to have a licensed electrician check appliances or equipment that have come into contact with water before use.

For further information on electrical safety after wet weather and general electrical safety contact Ergon Energy on 13 10 46, Energex on 13 12 53 or the Electrical Safety Office on 1300 650 662 or by visiting [www.deir.qld.gov.au](http://www.deir.qld.gov.au).

# Fault currents

There has been recent concern over the failure of electricians to consider fault currents when working on, or near live parts and to design protection systems correctly.

The high levels of energy dissipated during faults can cause damage to plant and property or injury to people.

Some of the issues identified by the Electrical Safety Office include:

- failure to consider fault current when working near live parts
- instruments not suitably rated for prospective fault currents, e.g. Category III or IV
- using alternative fault current protection devices in place of the equipment specified by the designer/manufacturer
- installation of incorrectly rated protection devices, inappropriate for the fault levels available
- incorrect substitution of cascading protection equipment
- cables incorrectly sized in accordance with AS/NZS 3000:2000 Electrical installations clause 2.4.4.3 e.g. failure to ensure cable temperature rise is within tolerance under fault conditions
- continuing to close circuit breakers onto faults
- failure to adjust moulded case circuit breakers from preset values
- failing to consider the increase in fault current levels caused by transformer upgrades or alternative supplies i.e. generators.



When working on or near live parts, fault current must be considered in a safe system of work. *The Code of Practice – Electrical Work, Code of Practice – Working near Live Parts* and AS/NZS 4836:2001 Safe working on low-voltage electrical installations provide guidance on safe systems of work.

# Safety audits

One of the many activities for improving electrical safety at workplaces and Queensland homes is the Electrical Safety Office's statewide compliance audit program.

Each year a range of audit projects are planned focusing on five electrical safety priorities:

- powerlines
- dwellings
- workplaces
- electricity supply industry
- general electrical industry.

Audits planned this year cover a range of equipment and industries, some of which do not involve electrical workers, including:

- owners of cathodic protection systems
- people who advertise the performance of electrical work
- insulation installers
- electrical contractors
- installation of safety switches at domestic residences
- second hand outlets
- decorative lights
- new electrical equipment offered for sale

- non electrical contractors who employ electrical workers
- electrical repairers who do not hold an electrical contractor's licence
- works of an electricity entity
- Registered Training Organisations (RTOs).

The results of the audits assist in the development of future audit programs, potential community engagement programs and the development of electrical safety strategies.

If you are selected for an audit an inspector from the Electrical Safety Office will contact you to make arrangements to conduct the audit. The inspector will ask questions which focus on how obligations are being addressed at your workplace. Having processes and procedures for a safe outcome is a good start. Audits promote discussion and provide you with plenty of opportunity to discuss electrical safety compliance with the inspector.

# Licensing for air conditioner installers

For many years the Electrical Safety Office has been raising awareness of the importance of using qualified tradespeople when installing air conditioners.

Two years ago, a new national licensing system for the refrigeration and air conditioning industry came into effect.

The laws mean that when electrical contractors are involved in the installation of air conditioners, any refrigerant gas handling and gas pipe connection work associated with the installation must be undertaken by a person holding a Refrigerant Handling Licence.

Refrigerant Handling Licences are administered federally by the Australian Refrigeration Council Ltd (ARC). They can be contacted on [www.artick.org](http://www.artick.org) or by calling 1300 884 483.



Businesses that contract to install air conditioning systems must have an appropriate electrical contractor licence if they also carry out any associated electrical installation work.

Alternatively, the business may engage a licensed electrical contractor to do the electrical installation component of an air conditioning contract.

A person actually performing the electrical installation work must be a licensed electrical mechanic.

Using a licensed electrical contractor also ensures the appropriate consumer protection safeguards are in place, including consumer protection insurance.

# Electrical trade skills for overseas workers

Employers wishing to employ electrical workers, need to be sure they get the right documentation from people applying to migrate to Australia under the Skilled Migration Program.

The Commonwealth Government, through Trades Recognition Australia (TRA), assesses the trade skills of people applying to migrate to Australia under the program.

Under a new system recently introduced by the federal Department of Workplace Relations (DEWR), an Off Shore Technical Skills Record (OTSR) may be issued for applicants who have been assessed against a relevant Australian certificate III trade qualification in their home country by an authorised Registered Training Organisation (RTO).

Alternatively, some applicants may be issued an Australian Recognised Trade Certificate (ARTC) when they arrive in Australia.

Migrants may be unfamiliar with mandatory electrical licensing requirements and associated procedures. Some may present all or some of the documentation they received as part of the migration process to a prospective employer with the mistaken understanding that they are eligible to perform electrical work.

The most common documentation likely to be presented is:

- a letter of classification for migration purposes
- a letter advising that an OTSR or ARTC has been granted
- an Off Shore Technical Skills Record
- an Australian Recognised Trade Certificate.

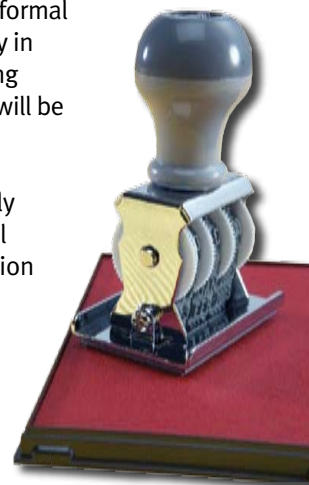
Employers are advised that none of these documents are, or substitute for, a Queensland electrical work licence or permit.

If you are presented with any of these documents you should direct the prospective employee to apply to the Electrical Safety Office (ESO) for the relevant electrical work licence.

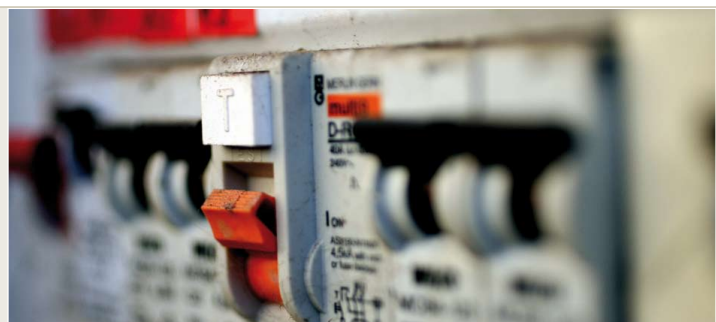
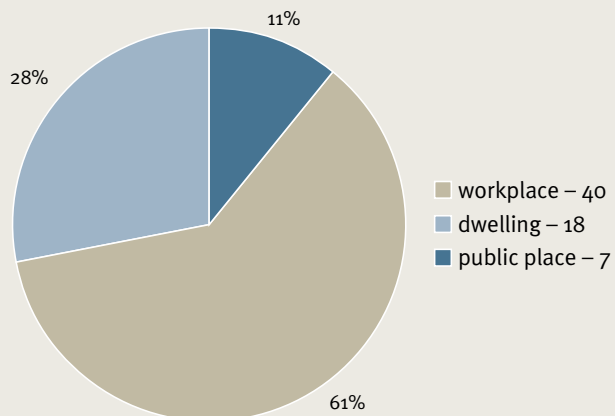
The ESO will then issue the applicant with a training permit to allow them to work under general supervision. If necessary the worker may need to take off-the-job formal training at an RTO to acquire competency in wiring rules and regulations. On achieving competency the Electrical Work Licence will be issued.

The trade classifications most commonly encountered by employers are electrical mechanic, electrical fitter and refrigeration mechanic.

For more information contact the ESO on [www.deir.qld.gov.au](http://www.deir.qld.gov.au) or by calling 1300 650 662.



Location of electrical fatalities between 1997–98 to 2006–07



In the past 10 years 34 fatalities would have been prevented had a safety switch been installed.

# Electrical safety in construction

Construction wiring in Queensland has been required to meet the same standards as the wiring in the completed building. The change was made in 2003 to ensure greater electrical safety for everyone in the construction industry.

Construction wiring must comply with AS/NZS 3000:2000 Electrical Installations. Wiring that is erected in a temporary manner or does not meet the standard will be breaking the law.

The law requires temporary wiring to be of the same standard as the finished wiring for all construction, housing or demolition sites. The law affects six areas:

1. construction wiring
2. switchboards
3. flexible cords, cord extension sets, flexible cables and accessories
4. lighting and luminaires
5. inspection and testing
6. relocatable construction premises and other electrical equipment on site.

Accidental damage to fixed wiring and flexible cords is an important safety concern on all construction sites. To ensure greater electrical safety for the construction industry, the law requires the following people to comply with revised Australian Standard 3012:2003 Electrical installations—Construction and demolition sites:

- an electrical contractor installing construction wiring
- a person in control of installed equipment
- an employer
- a self-employed person.

If an Electrical Safety Office inspector visits a site and finds that any of these areas do not comply with the standard, an improvement notice will be issued. Time will be allowed to fix the problem that is appropriate to the risk. If the inspector discovers an immediate electrical safety risk, an electrical safety protection notice will be issued.

The basis of the Wiring Rules and the Construction and Demolition Standard is that wiring and cables must be installed or located in a way that they are protected against likely damage, e.g. the fixed wired supply to a switchboard must be placed in a position where it is unlikely to be damaged. Wiring could also be provided with protection suitable for withstanding damage, e.g. a steel cover strip that protects against damage from machinery or equipment.

The requirements of AS/NZS 3012:2003 are additional obligations that relate to construction wiring for site supervisors. The requirements for all six areas are available as a fact sheet from the Department of Employment and Industrial Relations' electrical safety website, [www.deir.qld.gov.au](http://www.deir.qld.gov.au).



## Electrical fatalities 2006–07

The Electrical Safety Office is committed to reducing the number of injuries and deaths caused by electricity.

The *Electrical Safety Act 2002* has helped reduce electrical fatalities from 3.6 per million in the five years to June 2001 to 1.01 per million in the five years to June 2007. This is well below the national average of 1.9 deaths per million. In the last financial year the following fatalities occurred:

1. In August 2006, a person on a ladder was nailing panelling when he made contact with a live conductor.
2. In August 2006, an electrical worker was found deceased in the switch room of a commercial building. Evidence suggested contact had been made with the live equipment of the switchboard.
3. In January 2007, a person received a fatal electric shock after contacting a high voltage powerline with an aluminium irrigation pipe.
4. In January 2007, a person was found deceased near electrical equipment. The pin of a three pin plug was energised to 240 volts.
5. In March 2007, a person contacted a live fallen overhead conductor while walking in an easement to investigate a loss of supply to his home.
6. In June 2007, a farmer was repairing the sprinkler head on a lateral irrigator when the opposite end of the boom made contact with 11kV overhead lines.

# New mandatory licence to remove 10m<sup>2</sup> or more of bonded asbestos

Anyone removing bonded asbestos measuring 10 square metres or more must obtain a new 'B' class licence from Workplace Health and Safety Queensland.

Queensland's workplace health and safety laws were amended last December to extend the asbestos removal licensing scheme to cover bonded asbestos, such as fibro, and to adopt new national codes of practice for the management and removal of asbestos.

While certification has always been required to remove the high risk 'friable' (loose) form of asbestos, no similar requirement existed for 'non-friable' (bonded) asbestos containing materials such as asbestos cement sheeting.

The new 'B' Class licence means that only competent, licensed people can legally remove 'non-friable' asbestos containing materials in quantities of 10 square metres or more. That equates to about four standard sheets of asbestos cement sheeting.

Licence applicants will need to be able to demonstrate they are familiar with the procedures for removing

bonded asbestos material set out in the national *Code of Practice for the Safe Removal of Asbestos 2nd Edition*.

Registered Training Organisations and authorised assessors offer examinations in centres throughout Queensland.

Workplace Health and Safety Queensland will issue applicants assessed as competent and who pay an application fee of \$48.30 with a two-year licence.

An 'A' class licence will replace the current equivalent, an *Asbestos Removal Business Certificate*, which is required to remove 'friable' asbestos in any quantity. 'A' class licence holders will not need a 'B' class licence.

For more information visit [www.deir.qld.gov.au](http://www.deir.qld.gov.au) or call 1300 369 915.

## Electrical contractor fined for GBH

NQ Mining Services Pty Ltd, a North Queensland electrical contractor, was fined \$37,500 plus investigation and professional costs for breaching the *Electrical Safety Act 2002*. The fine was handed down on 14 August 2007 for breaches of sections 27(b) and 30 (2) of the Act.

On the day of the incident, in August 2005, workers for the company were undertaking maintenance work at one of Townsville City Council's water treatment plants.

The work involved use of a crane. According to witnesses the crane hook was being moved into place by a rigger, and as he was doing so the lifting gear came into contact with an 11kV overhead conductor.

The rigger suffered burns to 28 per cent of his body, resulting in a charge of grievous bodily harm against the company.

When passing sentence Industrial Magistrate Mr Scott Luxton noted that employers are required to ensure that their employees are free from injury or the risk of injury arising out of the conduct of the employers business or undertaking.

"Workers are to be protected whether they are fit or fatigued, careful or careless, experienced or inexperienced, overconfident of their skills or simply foolish," Mr Luxton said.

# Reappointment of Commissioner for Electrical Safety

Jack Camp has been re-appointed Commissioner for Electrical Safety. This is Mr Camp's second five-year term.

During his first term as Commissioner, Mr Camp advised on and oversaw wide-ranging changes to the electrical safety environment. These include the creation of an electrical safety plan for Queensland and the introduction of new electrical codes of practice, the adoption of recommendations made by the Queensland Ombudsman and Coroner, and mandating of safety switches in residential tenancies, manufacturing workplaces and the amusement industry.

Mr Camp sees reducing deaths and injuries from electricity as the key electrical safety priorities for the coming five years. He also aims to get the electrical industry and the wider Queensland community to play a greater part in improving electrical safety.

The Commissioner for Electrical Safety has the following functions:

- manage the activities of the Electrical Safety Board and the Board's Committees
- chair the Electrical Safety Board and the Electrical Licensing Committee
- advise the Minister on proposed codes of practice and electrical safety matters generally
- work cooperatively with the Department of Employment and Industrial Relations, in particular the Electrical Safety Office, to implement the Board's five-year strategic plan for improving Queensland's electrical safety performance.

Fixed wiring represented 25% of fatalities over the past 10 years. A safety switch would have prevented 76% of those.

## New wiring rules

New national wiring rules have been released specifying safety requirements for the design, construction and verification of electrical installations in Australia.

The wiring rules are intended to protect persons, livestock and property from electric shock, fire and physical injury hazards that may arise from an electrical installation. Guidance is also provided so that the electrical installation will function correctly for the purpose intended.

Major changes include:

- extended application of safety switches and testing for correct operation
- protection against arcing faults
- requirements for selectivity (discrimination) between circuits
- strengthening of requirements for the prevention of the spread of fire
- enhanced requirements for recessed luminaires
- requirements for sanitisation areas in the food processing industry
- mandatory requirement for testing safety switches.

A copy of the new wiring rules AS/NZS3000:2007 – Electrical installations can be obtained from SAI Global on [www.saiglobal.com/wiringrules](http://www.saiglobal.com/wiringrules) or by calling 131 242.

## Presentations for industry



The Electrical Safety Office runs seminars throughout the year to provide important safety information to the electrical industry.

Each seminar takes approximately 60 minutes, and is followed by a question and answer session.

To secure a place at a seminar near you, please register by completing an on-line registration form at [www.deir.qld.gov.au](http://www.deir.qld.gov.au) or by phoning (07) 3237 9845.

# Changes to the *Electrical Safety Act 2002*

A number of significant amendments recently made to the *Electrical Safety Act 2002* (the Act) will come into force in early 2008.

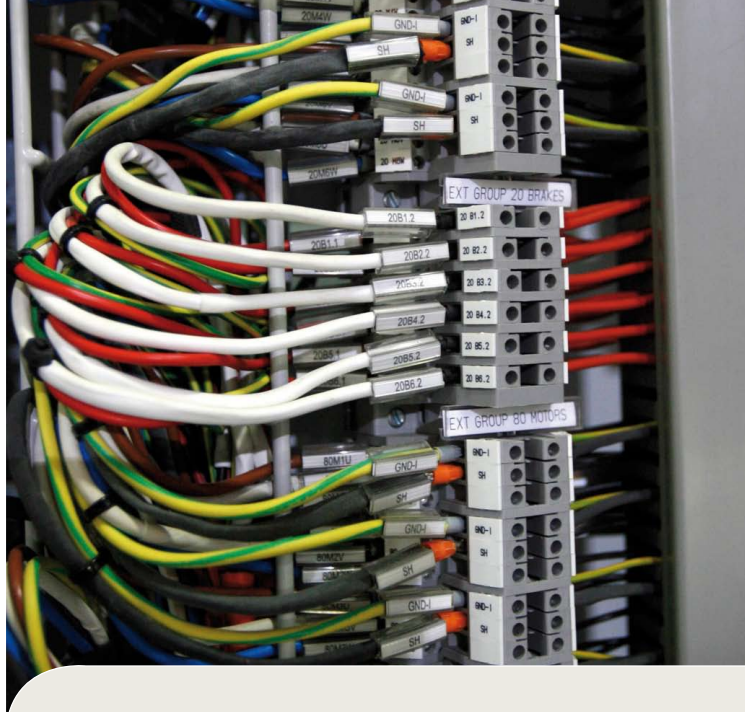
Amendments to the Act include:

- making employers and self-employed people responsible for keeping a register of licensed workers and ensuring that workers are appropriately licensed
- licence holders engaged to perform or supervise electrical work must notify the employer or self-employed person of any changes to the status of their licence
- an increase in the range of disciplinary actions available to the Licensing Committee for holders of work licences and to holders of electrical contractor licences that have expired
- clarifying options for inspectors to seize electrical equipment that causes or has the potential to cause an electrical risk, as well as provisions for the forfeiture and the return of unsafe electrical equipment
- confidentiality of information acquired, and authority to release information to another electrical safety enforcement agency on request
- a regulation-making power to introduce a requirement for signs or other advertising material for the hiring or sale of electrical equipment.

The Bill was passed by Parliament on 30 October 2007.

All changes come into effect from 1 January 2008, except for the register of licensed workers and the confidentiality of information provisions, which will commence from 1 March 2008.

Further information about these changes is available from the Electrical Safety Office on [www.deir.qld.gov.au](http://www.deir.qld.gov.au) or by calling 1300 650 662.



## Switchboard rescue and resuscitation

Employers must ensure that workers performing or helping to perform electrical work are competent in rescue and resuscitation of workers injured while working live.

It is a condition of an electrical licence that workers must be competent in resuscitation and, in the case of linespersons, pole top rescue.

Resuscitation training providers will not issue a resuscitation certificate for a period of more than 12 months, and if a worker does not have a current certificate, disciplinary action may be taken.

A person who is acting as a safety observer needs to be competent to:

- help with the electrical work
- rescue the person performing the electrical work and provide resuscitation.

The regulation also requires that the safety observer's competencies have been assessed in the past six months.

## Feedback

We welcome your feedback on Electrical Safety Outlook.

### Contact us at:

[esoutlook@deir.qld.gov.au](mailto:esoutlook@deir.qld.gov.au)  
or phone 07 3405 6978.

### Electrical safety information:

1300 650 662  
[www.deir.qld.gov.au](http://www.deir.qld.gov.au)

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