



Electrical safety awareness - Electrical Technicians and Appliance Servicing 2010

Electrical Equipment

A presentation by the Electrical Safety Office

Overview of topics

- Part 1
Electrical Safety Office
role & legislation.
- Part 2
Electrical equipment.



The Electrical Safety Office

- Division of the Department of Justice and Attorney-General.
- Works to Electrical Safety Board's *Electrical Safety Plan for Queensland 2009-2014*.
- Administers *Electrical Safety Act 2002* and Regulation.
- Responsible for delivering electrical safety services in Queensland.

Electrical Safety Office

Goals:

- Electrically safe dwellings, workplaces, public places and other environments.

We work with:

- Workers, employers and the community
- Unions and employer representatives
- Federal and state jurisdictions.

Key outcome:

- Reduction in electricity-related deaths and injuries.

Electrical Safety Plan for Queensland 2009 – 2014

Electrical safety vision

Elimination of the human cost to individuals, families and the community of deaths, injury and destruction that can be caused by electricity



Electrical safety five year goal

Elimination of all preventable electrical deaths

Electrical Safety Plan for Queensland 2009 – 2014

Strategies

Education/
Awareness

Legislation

Compliance

Training

Equipment Design
/ Innovation

Places

Dwellings
Workplaces
Public Places

Priority
Areas

Powerlines
Electrical installations
Electrical equipment

People

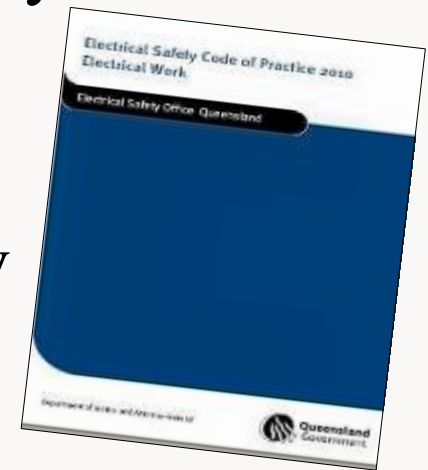
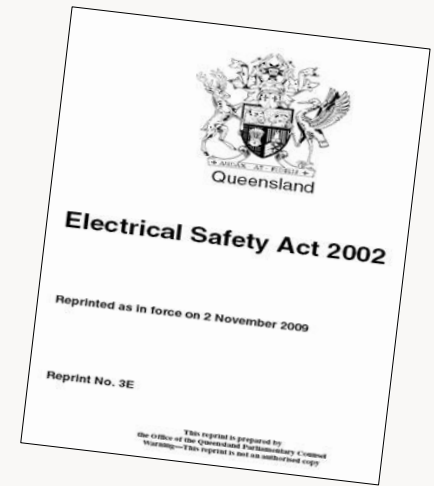
Electricity Supply Industry
General Electrical Industry
Non-electrical workers and self-employed persons
Other persons and the community



Relationships with stakeholders
Data and analysis
Electrical Safety Office business plan

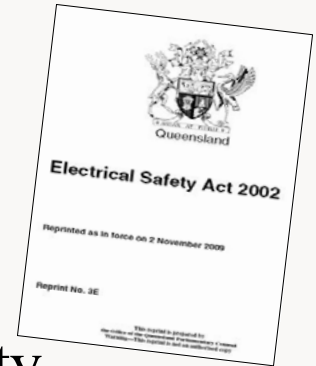
Legislation framework

- *Electrical Safety Act 2002 (ESA)*
- *Electrical Safety Regulation 2002 (ESR)*
- Electrical Safety Code of Practice
 - Five Codes of Practice effective 1 January 2010
 - Working Near Exposed Live Parts
 - Electrical Work
 - Electrical Equipment - Rural Industry
 - Risk Management
 - Works



About the *Electrical Safety Act 2002*

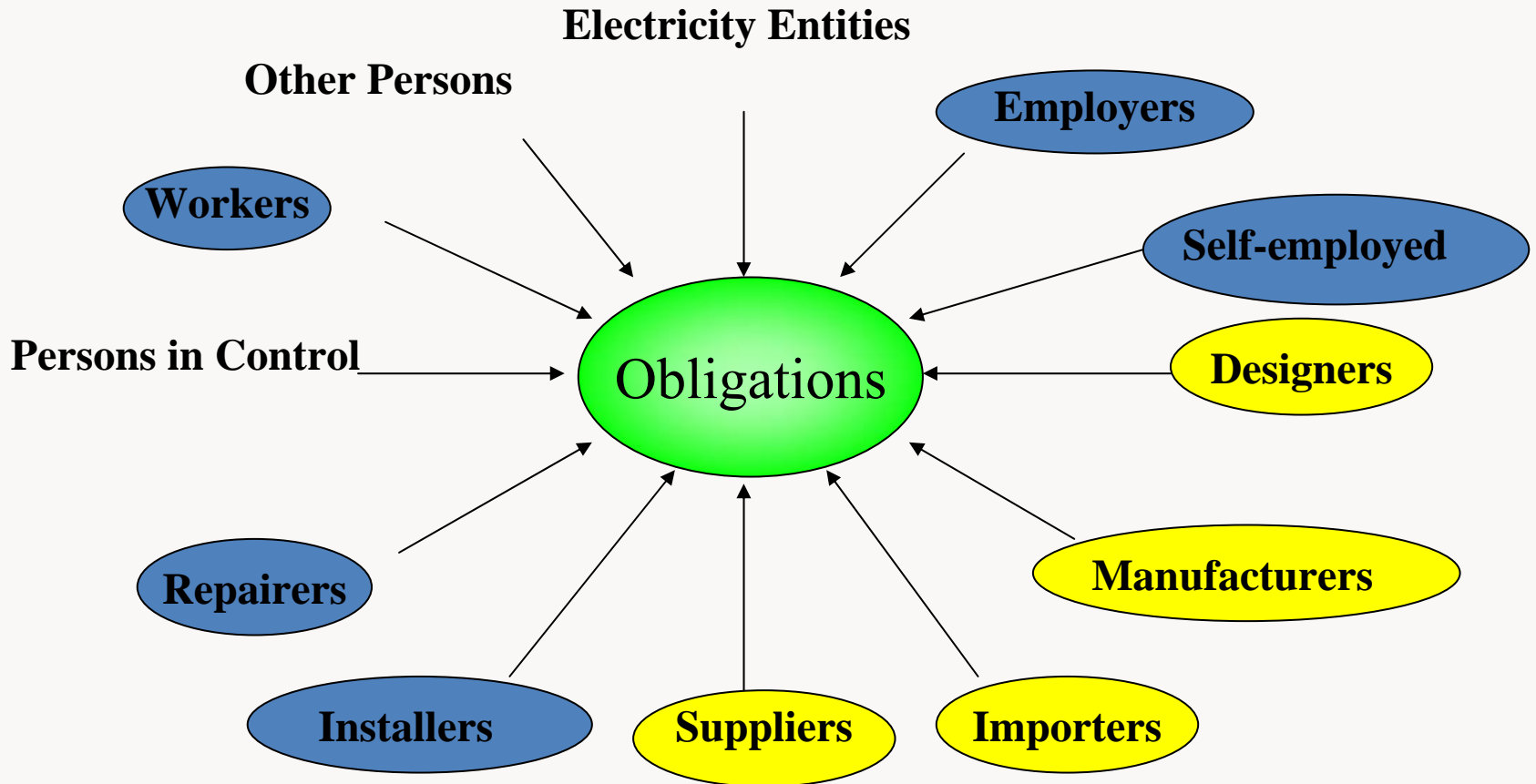
- Imposes obligations on certain persons who can affect the electrical safety of others.
- Obligations must be discharged.
- Establishes benchmarks for industry and the community – Regulations and Codes of Practice.
- Provides electrical licensing – and disciplinary action if required.
- Provides consultation through the Electrical Safety Board and its Committees.



Why are electrical safety obligations imposed?

To ensure all persons who may affect the electrical safety of others by their acts or omissions have particular electrical safety outcomes they must achieve.

Who has obligations?



Designer's obligations - (ESA s31)

- Ensure the electrical equipment or installation is designed to be electrically safe; and
- Ensure the design is accompanied by information about the way the electrical equipment or installation must be used and installed to ensure the equipment or installation is electrically safe.

Manufacturer's obligations - (ESA s32)

- Ensure the electrical equipment, when made, is electrically safe.
- Ensure the electrical equipment, when made, is tested and examined to ensure it is electrically safe.

Importer's obligations - (ESA s33)

- Ensure the electrical equipment is electrically safe.
- Ensure electrical equipment is designed to be electrically safe.
- Ensure the electrical equipment is tested and examined to ensure it is electrically safe.

Supplier's obligations - (ESA s34)

- Ensure when the electrical equipment leaves the supplier it is accompanied by information about the way the electrical equipment must be used to ensure that its use is electrically safe

Installer's obligations - (ESA s36)

- Ensure that the way the equipment or installations is installed is electrically safe, e.g. installed as per manufacturers instructions.
- Ensure the processes followed for installing the equipment or installation ensure that, when installed, it will be electrically safe.
- Ensure that after the equipment or installation is installed, the person tests and examines it to ensure it is electrically safe.

Electrical safety obligation of employer or self-employed person (ESA s. 30)

“...to ensure that the person’s business
or undertaking is conducted in a
way that is electrically safe.”

Electrical safety obligation of workers

(ESA s39)

- to comply with employer's instructions for electrical safety.
- use personal protective equipment if properly instructed in its use.
- not to wilfully interfere with or misuse anything provided for electrical safety.
- not to wilfully place any person, including the worker, in electrical risk.

Repairer's obligations - (ESA s37)

- Ensure the way the equipment or installation is repaired is electrically safe.
- Ensure the processes followed for repairing equipment or installation ensure that, when repaired, it will be electrically safe.
- Ensure the equipment or installation, when repaired, is electrically safe.



Repairer's obligations - (ESA s37)

- Equipment should be repaired in accordance with manufacturers original design or manufacturers/designers approved change.
- Otherwise the repairer is taking on obligations of designers/manufacturers as well as repairers.

Maximum penalties for breaching an obligation

- Multiple deaths – 2000 units or 3 years jail.
- Death or grievous bodily harm – 1000 units or 2 years jail.
- Bodily harm – 750 units or 1 year jail.
- Other – 500 units or 6 months jail
[1Penalty unit = \$100 (individual) or \$500 (company)].

Electrical licensing – contractor licences:



Unrestricted contractor licence-
A business with a gold electrical contractor licence is licensed to perform all types of electrical work.



Restricted Contractor Licence-
A business with a silver electrical contractor licence is restricted to the scope of work of the qualified persons electrical work licence.

Electrical contractor licence requirements — (ESA s56)

- A person who runs a business or undertaking that includes the performance of electrical work must hold a **Queensland electrical contractor licence**.
- A person conducts a business or undertaking that includes the performance of electrical work if the person:
 - advertises if the person carries on the business of performing electrical work – published advertisement;
 - contracts for the performance of electrical work;
 - represents to the public that the person is willing to perform electrical work;
 - employs a worker to perform electrical work other than for the person.

Electrical contractor licence requirements — (ESA s56)

- Performance of repairs outside of workshop.
- Must ensure workers are appropriately licensed (ESA s57AA); and
- Record and maintain a register of licensed workers (ESA s57AB).

Electrical contractor licence exemptions

A licensed electrical mechanic who performs:

- Work for self or relatives at premises owned or occupied by self or relatives
- Minor emergency repairs to make electrical equipment electrically safe
- Contracting for any work if it is to be sub-contracted to a licensed electrical contractor (ESA s56(3)(b)).

Electrical contractor licence exemptions

- Building Services Authority (BSA) Contractors licence for repair work only associated with trade e.g. Plumbing & Gas or Air Conditioning & Refrigeration - ESR s55(a).

Summary

Electrical Safety Office role and legislation:

- Role
- Electrical safety legislation framework
- Obligations of persons
- Contractor licensing.

Questions?

Electrical equipment

- Certificate of approval for prescribed equipment
- Safety requirements for other equipment
 - Non-prescribed equipment
 - Second hand equipment
 - Hire equipment
 - Recalls
- Live work
- Testing and Certificates of test.

Fire destroyed this house – electrical cause



Fire caused by a dishwasher – kitchen damage



Electrical equipment – prescribed and non-prescribed

Electrical equipment is defined as either:

- **Prescribed:** Equipment listed in schedule 3 of *Electrical Safety Regulation 2002* and defined in AS/NZS 4417. Also must have a certificate of approval and an approval mark on the product being sold.
- **Non-Prescribed:** All other equipment that is not defined as prescribed.

Both categories have requirements to ensure the electrical safety of the equipment before it can be sold.

Prescribed equipment

- Prescribed electrical equipment as defined in AS/NZS4417, assessed for approval must meet the safety requirements of the relevant Australian standard.
- Usually related to household type equipment.
- *Electrical Safety Regulation 2002, Schedule 3* details prescribed classes of electrical equipment.

Note: Fixed light fittings and air conditioners are not in the prescribed list.

Approval markings

Queensland:	Q91610, Q051123
Western Australia:	W2015
Victoria:	V99, V105, V98333, V05212
New South Wales:	N11, N10422, NSW1234, or SGSEA/12345, A/12345EA, SAA12345EA QAS:TE1234, SAI:TE1234 with  or 
South Australia:	S1, S442
Australian Capital Territory:	A050
Tasmania:	T05123

The RCM – Regulatory Compliance Mark

- This is the Regulatory Compliance Mark (RCM).



- These are not Regulatory Compliance Marks.



The **A Tick** relates to communication compliance

These marks are issued by the Australia Communications and Media Authority (ACMA)- and do not relate to safety approvals.




The **C Tick** relates to Electromagnetic Compatibility compliance (EMC)

This is the approval number

Haier DOMESTIC DISHWASHER

220-240V~ 50Hz 0.03-1MPa IPX1 Model HDW100WHT
MAX 2100W 2000W V 07693
Enclosure Dimensions 600X600X850 (mm) N 14463
Serial No. FA05U0E0900FA89A0227

 MADE IN CHINA

This number is an ACMA supplier code which relates to the C Tick symbol, not an approval number

Non-prescribed electrical equipment

- Non-prescribed electrical equipment must meet essential safety requirements found in *AS/NZS 3820* before being sold or offered for sale.
- This standard outlines essential safety requirements for any electrical item.
- *AS/NZS 3820* indicates compliance can generally be obtained by showing compliance to product standards specific for the equipment.

Non-prescribed electrical equipment

- If there is no specific product standard, or the standard is insufficient for the product, additional assessment may be needed (and additional expert advice from specialist consultant engineering companies may be required).
- Australian Standards can be purchased from the following link: www.saiglobal.com.
(Generally if the product is within the scope of the standard the standard may be applicable).

Second-hand electrical equipment

- Prescribed second-hand equipment – must be marked with the approval number (mark) which was valid at the time of the original sale. i.e. you can't import prescribed equipment from overseas and sell it as 'second hand' without first obtaining a certificate of approval.

Second-hand electrical equipment

- The seller of second-hand electrical equipment must inform the buyer if the item has been tested and found to be electrically safe or if it has not been tested.
- The seller has an obligation to ensure that, when the equipment is sold, safety instructions for the equipment must be included
- Manufacturers operating, installation and maintenance instructions would usually satisfy this requirement. The department's website contains basic safety instructions for some electrical equipment.

Electrical equipment

Medical Equipment

- Medical equipment used in hospitals etc generally is non-prescribed equipment (unless it can be used for household use, such as an AC adaptor). There are Australian standards specific to medical use such as *AS/NZS 3200.1.0:1998* (see www.saiglobal.com).

Electrical equipment

Hire of Electrical Equipment

- Electrical equipment used / hired in a household is required to meet the legislative requirements as previously mentioned and to ensure it is electrically safe (if it fits a prescribed definition it needs to have a certificate of approval).
- Each time an item is hired out it must be inspected and tested by a competent person. If there is damage or it fails testing it must be labeled and taken out of service immediately.

Electrical product recalls

- In the interest of public safety, the ESO provides access to product recalls at www.electricalsafety.qld.gov.au
- Electrical product recalls are released by the responsible company and may be found at the federal product safety recall Australia website (www.recalls.gov.au) as well as the ESO website.
- Conducting a recall does not automatically protect an obligation holder against prosecution action. Those responsible for putting the product on recall need to be aware that a recall is not complete until every one of the affected items have been accounted for (repaired, rectified, retrieved or destroyed). The manufacturer or importer has obligations under the *Electrical Safety Act 2002* and must ensure they comply with those obligations.

Electrical product recalls

- Recalls, generally, are initiated and conducted voluntarily by most companies. However, recent amendments to the *Electrical Safety Act 2002* allow the Minister for Industrial Relations to require a company to conduct a mandatory recall in circumstances where electrical risk is likely to occur.
- Recall advertising has a standard layout and the ESO works with companies to assist in the recall process and have a list of newspaper to advertise in to ensure statewide coverage.
- Recalls are most effective when customer details are known e.g. via store records of sales/deliveries, warranty registration or repairs database.

Electrical product recalls

- Recall advertising has a standard layout. The ESO have a list of suitable newspapers to advertise in state-wide and can assist with the recall process.
- Recalls are most effective when customer details are known.
 - e.g. store records of sales/deliveries, warranty registration or repairs databases.



Electrical Safety Recall

Brilliant "Glance" Heater Light Exhaust Fan



Model 99987/05



Brilliant Lighting is conducting a voluntary product recall of units of the "Glance" heater/light/fan model 99987/05 sold from 2006 to 2009. This product was sold at specialist lighting retailers in QLD, NSW, VIC, SA, WA & TAS.

How to identify
Do you have a Brilliant "Glance" heater/light/fan that meets the following criteria?
a. It matches the photograph above
b. It has the Brilliant brand on it
c. It has a rectangular diffuser located between the heat globes

The Hazard
Potential for injury resulting from electric shock when changing the internal central 60W light bulb due to exposed live terminals adjacent to the central light globe.

What to do
Please call the toll free number below (Monday-Friday, 9 am-5 pm AEST). You can continue to use the product. You must not remove the cover to replace the internal central 60W Light bulb.

Toll Free information line: 1 800 282 311

The Brilliant Glance 99987 room heater being recalled is incorrectly marked with a Queensland approval number and does not have a Queensland approval.

Supplier Details
Blink Lighting
956 Stud Road
Rowville VIC 3178
Tel: 03 9765 2555

Brilliant

See www.recalls.gov.au for Australian Product Recall Information

Electrical product recalls


Examples of recalls include:

- Dishwashers where poor design/manufacture of an internal connection resulted in fires.
- AC adaptor where poor design/manufacture resulted in enclosure breaking open causing live parts to be exposed.

For equipment repair under recall, refer the customer to the manufacturer's advertised recall instructions.

**ELECTRICAL SAFETY
RECALL**

CABAC Uninterruptible Power Supply model No. UPS1700DV2



Cabac is voluntarily recalling the Uninterruptible Power Supply (UPS), UPS1700DV2 due to a possible safety concern.

Product Description: CABAC Uninterruptible Power Supply
Model: UPS1700DV2
This unit was sold throughout Australia through electrical wholesalers and other distributors sold between the years 2006 and 2009.

Hazard: Risk of Electric Shock
Unmodified versions of the UPS may have a risk of electric shock in the event of removing the input plug from the socket outlet while the UPS is still energised, and coming into contact with the pins of the plug or the UPS input mains connector pins.

Action Required: Cabac advises that any product purchased from 2006 until mid 2009 should be sent back immediately to the point of purchase or any electrical wholesaler. The product will then be forwarded to Cabac for inspection and modification to correct the issue if it exists, at no extra cost.
Any product with a large blue dot on the back panel does not need to be returned as these products have already had the modifications implemented.

The safety of our customers is paramount to Cabac and we apologise for any inconvenience caused.

If you require any further information please call Cabac on 133 122 and talk to one of our friendly customer service representatives.

Legend Corporate Services PTY LTD
**See www.recalls.gov.au for
Australian Product Recall Information**



Building a fair, safe and just Queensland

Department of Justice and Attorney-General

Justice services Corporate Fair and safe work

Electrical safety | Industrial relations | Workers' compensation and rehabilitation | Workplace health and safety

Page Tools

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Manufacturers, importers and retailers

Cathodic protection systems

Installation and design, and registration requirements for cathodic protection systems.

Sale of second hand equipment

How to use second-hand equipment safely.

Retailer's role in electrical safety

Code of Conduct for the retail sale of electrical installation products to the public.

Recognised test laboratories

National Association of Testing Authorities (NATA) accredited laboratories, laboratories outside Australia.

Requirements for selling electrical equipment

Requirements for sale of new electrical equipment, definitions of prescribed and non prescribed electrical equipment, application forms.

Hire of electrical equipment

Regulatory requirements when purchasing electrical equipment for hire, testing and tagging requirements for ongoing maintenance.

Energy efficiency

Electrical equipment required to be registered for energy efficiency prior to sale, national application procedures.

Product notices

What manufacturers, importers and sellers must do with their non-insulated pins product.

Queensland Electrical Equipment Approval Certificates

You can search online for Queensland electrical equipment approval certificates.

Resources

[Queensland Electrical Equipment Approval Certificates](#)

Contacts

Electrical safety infoline
1300 650 662 (charged at the cost of a local call)

Electrical Safety Regulation 2002

- Sets out what you must and must not do – including about:
 - Live electrical work
 - Working near electrical parts – e.g. working near live exposed live parts and electrical equipment
 - Compliance with relevant standards – e.g. AS/NZS 3000 (the Wiring Rules)
 - Testing of installations and equipment – certificates of test.

Live electrical work

Testing is live work.



Basic requirements for electrical work (ESR s11)

An employer or
self-employed person
must
ensure that live work is
not
performed unless -

Live work (ESR s.12)

It is not practicable to perform the electrical work other than by live work because;

- It is necessary in the interests of safety,
- Electricity supply is needed to perform the electrical work, or
- There is no reasonable alternative to performing the electrical work by live work.

Live work – continued

If there is no reasonable alternative to live work – then all these requirements must be met:

1. Risk assessment
2. Safe system of work (AS/NZS 4836)
3. Authorisation
4. Appropriate training



Live work – continued

5. Test equipment is appropriate
6. Clothing and PPE are appropriate
7. Isolation point
8. Area is clear of obstructions
9. Safety observer.



Testing — (ESR s14)

- A person who performs electrical work, **must** ensure the electrical equipment is tested.
- Testing must be directed at ensuring that the electrical equipment, to the extent it is affected by the electrical work, is electrically safe.
- If the electrical equipment is energised for testing, the person who performs the test **must** ensure persons not necessary for the testing are electrically safe.

Testing — (ESR s15)

- A contractor **must**, as soon as practicable after the testing, ensure that the person for whom the electrical work was performed is given a certificate.
- Contractor **must** keep a copy of a certificate for at least **5 years**.

Safety equipment - (ESR s17)

- Is used in the performance of electrical work.
- Suitable type for the electrical work being performed.
- Maintained so that it is suitable for use.
- If cannot be visually confirmed as being correctly functioning and safe - tested at least every **6 months**.
- Labelled.
- Records of the tests performed **must** be kept, for at least **5 years**.

Test equipment — (ESR s18)

- Ensure it is appropriate for its intended use.
- If cannot be visually confirmed as being correctly functioning and safe - tested at least every **6 months**.
- Records **must** be kept for 5 years.

Session review

- The *Electrical Safety Act 2002* and the *Electrical Safety Regulation 2002* impose legal obligations on all parties along the chain of supply of electrical equipment, and those installing or repairing equipment, or even hiring equipment to ensure the public is safe from electrical related risks.
- The Electrical Safety Office also regulates:
 - Electrical equipment safety;
 - Electrical equipment approvals;
 - Recalls of equipment;
 - Accredited auditors for high voltage and hazardous area equipment;
 - Hire of electrical equipment; and
 - Sale of second hand equipment.

Future technician and appliance servicing information seminars

- The Electrical Safety Office's 2011 seminar program will cover Queensland's electrical licensing requirements in more detail.
- Check the Electrical Safety Outlook newsletter for dates and locations of these free seminars.

Stay connected!

Subscribe to the FREE Electrical Safety Outlook today at www.electricalsafety.qld.gov.au

Electrical Safety Outlook Summer 07

A publication of the Electrical Safety Office

New safety switch regulations for rental accommodation

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

Electrical Safety Outlook is a publication produced for electrical license holders and others involved in the industry for industry on and practical information about our industry and a range of topics on safety development to dealing with changes on the job.

Electrical Safety Outlook will be published four times a year and you can get your copy sent weekly by subscribing to the e-version at www.eso.qld.gov.au.

We welcome your comments and input.

Peter Lambert, General Manager, Electrical Safety Office

Landlords!

Safety switches for domestic rental properties

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

Queensland the Smart State

Electrical Safety Outlook Winter 08

A publication of the Electrical Safety Office

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Electrical contractor self assessment audit package

A new self paced audit package is available for electrical contractors.

This voluntary package developed by the Electrical Safety Office will help contractors to better understand their key electrical safety obligations, and how effectively their knowledge, documentation and work systems help them meet their legal responsibilities.

The package consists of a set of self-administered questions on a contractor's licence, business and their apprentices and workers.

It also covers topics concerning live work, risk assessment processes, repairs and equipment that require referencing the Electrical Safety Act 2002, the Electrical Safety Regulation 2002, and the Electrical Work Code of Practice.

You can find the package on the ESO website under training.

Interested in switching careers?

If you value safety and security, and you're interested in:

- promoting electrical safety
- investigating electrical incidents
- fostering cooperation and consultation
- minimising public and personal risk
- and you have an electrical mechanic's qualifications

You may have what it takes to be an electrical inspector.

Benefits include attractive salary package, comprehensive training, flexible hours, family friendly policies and study assistance.

Check out the recruitment package for Careers with the Electrical Safety Office at www.eso.qld.gov.au.

The Electrical Safety Office is recruiting now.

Queensland Government
Department of Employment and Industrial Relations

Queensland the Smart State

Electrical Safety Outlook Spring 08

A publication of the Electrical Safety Office

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Christmas lighting safety hints

Christmas is fast approaching and your customers may be in the process of preparing to decorate their home or garden with festive lights.

Some handy hints to advise your customers when they are decorating their homes and gardens:

- When buying new decorative lighting kits, look for an approval number (e.g. Q10000, 100000, 1000000, 10000000, 100000000) or the regulatory compliance mark logo, which indicates compliance with Australian standards. These are normally found on the decorative lighting and may also be printed on the packaging.
- Regulatory compliance mark logo
- Use extra low voltage (ELV or 24V) outdoor lights, especially outdoors, downspouts. These should be supplied with an approved power supply unit (transformer).
- Do not alter or modify any lighting equipment.
- Lights used outdoors should be specifically designed for this purpose. Power boards are suitable for the intended use.

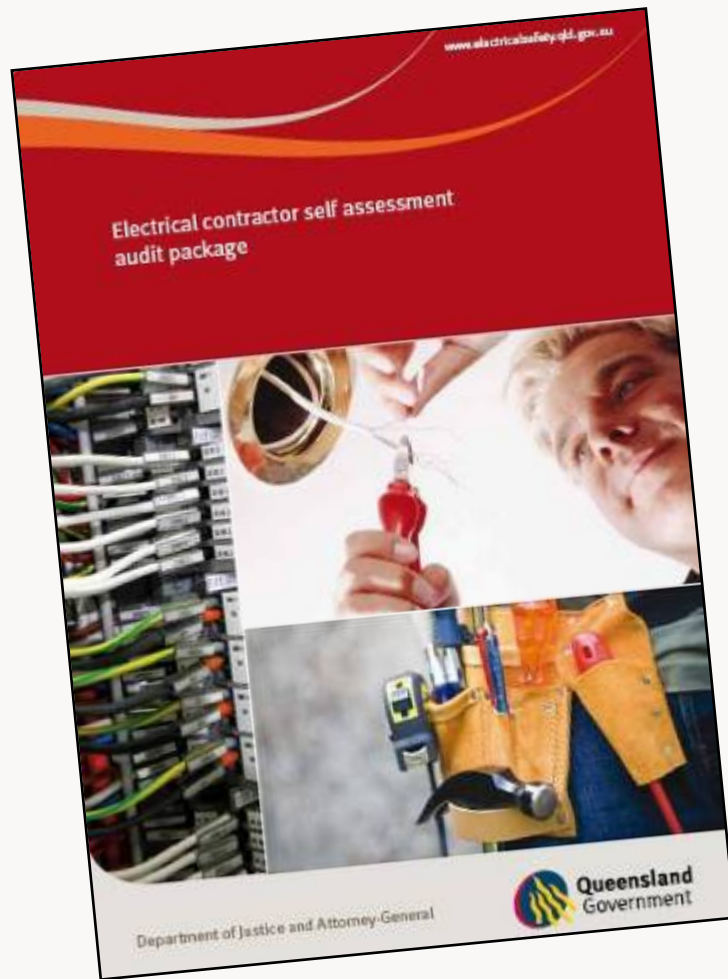
Some safer methods for using old or new decorative lighting are:

- If power outlets are not protected by a built in safety switch, either have a licensed electrical contractor install one, or connect decorative lighting through a portable safety switch.
- Be aware that using multiple high powered lamps may overload your electric circuits.
- When using multiple sets of decorative lighting or high powered lights (such as para floods, flood lights or spotlights), plug them into a power board fitted with overload protection.
- The use of double adaptor or piggy back plugs is not recommended.
- Use only factory made extension leads or those made by a licensed electrician.
- Before use, check decorative lighting and all leads for damage, and only use if undamaged.
- Always fully unroll extension leads to avoid overheating.
- All outdoor electrical connections must be waterproof. You can buy waterproofing accessories that do the job.

For more information on safety hints download the Decorative Lighting Safety Hints brochure on the department website at www.eso.qld.gov.au/pdfs/decorative-structure.pdf.

Queensland Government
Department of Employment and Industrial Relations

Queensland the Smart State



- Electrical contractor self-assessment audit package.
A free resource for safe electrical work.

Annual Queensland Work Safe Awards

Celebrate, showcase and reward innovative ideas, leadership and commitment to workplace health and safety.

Five different categories. Four for Workplace Health and Safety and one for *Electrical Safety Category 5 – Best solution to an identified electrical safety issue.*

Each year the competition is open to Queensland businesses who have developed or implemented safety solutions and practices resulting in health and safety improvements, no matter how big or small.

Prize money of \$1000 to be won!

Remember these dates for next years awards:

Entries open: early May

Entries close: early July

Finalist announced: September / October

Winners announced: late October



Where to find more information
on electrical safety:

Electrical Safety Office

www.electricalsafety.qld.gov.au

Electrical Safety Infoline

1300 650 662

Questions?