

electrical focus

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Installing down lights

Energy Safety has previously warned of the dangers associated with the incorrect installation of down lights, in particular the extra-low voltage dichroic type.

The inability of the lamp holders and transformers to dissipate heat has resulted in many fires in roof spaces.

There has been a significant increase in the installation of extra-low voltage dichroic down lights in recent years. Energy Safety is again reminding electricians that the installation of these fittings needs to comply with the requirements of Clause 4.3.6.3 of AS/NZS 3000:2000 Wiring Rules:

Clause 4.3.6.3 – Lamps and luminaries near thermal insulating material

Thermal insulating material shall not prevent free air flow around or through luminaries and their associated ancillary gear, and shall be separated by not less than –

- (a) 25 mm from low voltage lamps and luminaries; or
- (b) 50 mm from extra-low voltage dichroic lamps or luminaries or associated transformers.

Where the thermal insulation is of the loose fill type, fire resistant barriers shall be provided to maintain the separation.

These are easy requirements to achieve and should prevent serious fires occurring.

Height of switchboards in domestic installations

Electrical contractors and consultants are reminded of the need to keep architects, builders, subcontractors etc apprised of the requirements of Australian New Zealand Standards (eg. the Wiring Rules) and the WA Electrical Requirements.

One aspect that needs particular attention is the height of switchboards in domestic installations, for safety purposes.

The AS/NZS 3000:2000 Wiring Rules does not specify a minimum mounting height for such switchboards. Clause 1.10.2 of AS/NZS 3000:2000 states that electrical equipment requiring operation or attention by a person shall be installed to provide adequate and safe means of access and space for such operation or attention.

Additionally, Clause 2.9.8.4 of AS/NZS 3000:2000 Wiring Rules states that, in general, a switchboard shall not be located within 1.2 metres of the ground, floor or platform unless it complies with Clause 2.9.6 (ie. no exposed live parts).

Recently there was a case where an inspector issued an Order on an installation where the switchboard was well below the 1.2 m and was difficult to operate safely. This resulted in an appeal by the electrical contractor. However the Director of Energy Safety confirmed the Order, advising that a minimum height of 900 mm would have to be observed to satisfy safety criteria. This height matches that specified in the 1991 edition of the Wiring Rules.

It is important that, when determining the physical location of a switchboard, consideration be given to possible future building alterations or landscaping that might render the switchboard location not in accordance with safety requirements.

Similar considerations also apply to the locations of a supply authority's service equipment [meters, SPDs (service protective devices) etc].

This information is available in the WA Electrical Requirements, including specific minimum and maximum heights for meter enclosures.

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Energy Safety



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It is important that this type of information is made known to architects, consultants, builders, subcontractors etc to prevent situations where:

- a new consumer cannot have a connection to supply because the switchboard or meter enclosure must be repositioned; or
- a consumer has electricity supply interrupted whilst a switchboard or meter enclosure has to be repositioned due to environmental changes.

Isolation of plant

Each year, many people at work are injured, sometimes fatally, when electrically powered plant is inadvertently operated or activated while people are working on it.

The *Occupational Safety and Health Regulations 1996* require items of workplace 'plant' to be isolated from their primary energy source when persons are inspecting, repairing, maintaining, adjusting or cleaning the plant. 'Plant' in this context is a general name for machinery, tools, appliances and equipment.

It is the responsibility of people at work and in control of workplaces to develop safe isolation procedures to minimise the risk of injury while workplace plant is being inspected, or otherwise worked on.

It is also the responsibility of those persons to ensure that such isolation systems, once developed, are documented and strictly followed. Isolation systems should be reviewed from time to time to ensure they remain relevant, effective and appropriate.

The isolation requirements apply even to simple plant that can be isolated from the power source by removal of a plug and locking off the power outlet.

There is anecdotal evidence that some electrical contractors are advising clients who are trying to

comply with occupational safety and health legislation that a facility to lock off the power outlet in such circumstances is not required, but this is not correct.



The WorkSafe Western Australia Commission has published a Guidance Note (booklet) to assist people at work and in control of workplaces to develop isolation systems. Copies of the

booklet, along with other guidance notes, codes of practice etc are available by telephoning WorkSafe on (08) 9327 8775. The first copy of the booklet is free, additional copies are \$1.10 each. Also, all WorkSafe publications can be downloaded without charge from the Internet at www.docep.wa.gov.au.

New edition of AS/NZS 3012:2003

Standards Australia recently announced the release of the revised Standard AS/NZS 3012:2003 Electrical installations-Construction and demolition sites.

This Standard has been published to more closely align with the performance based philosophy of AS/NZS 3000 Wiring Rules and uses more commonly used terminology.

The scope of the Standard clearly defines what constitutes a construction and demolition site. There are new terms for construction and demolition sites, electrical equipment and fixed equipment.

In Section 2, a new Clause addresses the additional protection against direct and indirect contact. There are also concise single line connection diagrams for generators.

Section 3 provides clear steps to ensure compliance with testing and checking requirements and addresses documentation of test results.

New appendices include:

- Electrical installations in the

domestic housing construction industry

- Classification of building and structures
- Regulatory application on construction and demolition sites
- Marking of switchboards to indicate the presence of live parts including the use of specific Danger Signs.

The recommended colours for tags on tested equipment are now found in Appendix F.

Electricians working on construction and demolition sites are required to comply with AS/NZS 3012:2003 in accordance with the *Occupational Safety and Health Regulations 1996*.

Reporting installation defects

Electrical contractors and their electrician employees are reminded of the need to report defects such as unsafe or non-complying parts of electrical installations.

Regulation 62 of the *Electricity (Licensing) Regulations 1991* requires that:

... where it appears to an electrical worker that there is a defect in any electrical installation or electrical equipment that renders the electrical installation or electrical equipment unsafe, the electrical worker shall immediately report the matter to:

- the owner or operator of the installation;
- the relevant supply authority; AND
- the Director of Energy Safety ie. the Energy Safety office.

It is important that the situation be reported to each of these bodies.

It is also important that electricians do not leave defective work that is unsafe. Electricians should, with the knowledge/approval of the owner/occupier of the installation, make the installation safe, but without disturbing 'evidence' that might be required for any subsequent investigations.

Licensing requirements for testing and tagging electrical equipment

It is a requirement of the *Occupational Safety and Health Act* and *Regulations* that electrical equipment on **construction sites** must be regularly tested and tagged.

On **sites other than construction sites**, testing and tagging of electrical equipment is not specifically required by law, but is frequently required as part of an organisation's own occupational safety and health policy or some other requirement.

Construction Sites

Regulation 3.61 of the *Occupational Safety and Health Regulations 1996* specifies that electrical installations, appliances and equipment on construction sites must comply with Australian New Zealand Standard AS/NZS 3012 "Electrical Installations – Construction and demolition sites". Clause 3.6 of AS/NZS 3012:2003 specifies that electrical equipment shall be inspected and tested in accordance with AS/NZS 3760 "In-service safety inspection and testing of electrical equipment".

Regulation 3.62 of the *Occupational Safety and Health Regulations 1996* requires that persons who test and place their electrical worker's licence number on the tag must be electrical workers as defined in the *Electricity (Licensing) Regulations 1991*. The electrical worker must be the holder of either an 'A' grade electrical mechanic's or electrical fitter's licence or a restricted electrical licence endorsed with the 'scope of work' relevant to the type of equipment being tested.

Sites Other Than Construction Sites

On sites other than construction sites, testing and tagging of electrical equipment may be performed by licensed or



unlicensed persons, depending on the nature of the testing:

- **Using a plug-in tester**

When testing is carried out by plugging equipment into a commercially available 'plug-in' testing device, the person conducting the testing need not hold any electrical licence and may fix an appropriate tag. Note that if the equipment is found to be defective, it can only be repaired by an appropriately licensed electrical worker.

- **Using electrical test instruments**

Where testing is carried out using an instrument with hand-held probes or clip-on leads, such as an insulation resistance meter, and the equipment needs to be partly dismantled, then the person performing the testing must hold an electrical mechanic's licence, electrical fitter's licence or a restricted electrical licence endorsed with the relevant units of competence relating to the type of equipment being tested.

In all cases, if the equipment or appliance requires dismantling or repair, the work must be carried out by the holder of an electrical mechanic's or electrical fitter's licence or a restricted electrical licence endorsed with the relevant units of competence relating to the type of equipment being dismantled or repaired.

Rick Hart Discounts fined for breach of Electricity Act

An electrical discount store has been fined \$3,000.00 for failing to display energy efficiency labels on some of its appliances.

Hi Fi Corporation (WA) Pty Ltd, trading as Rick Hart Discounts in Karrinyup, was convicted in October 2003 of breaches of the *Electricity Act 1945* and was fined \$3,000.00 with \$457.70 costs for failing to display energy efficiency labels on some electrical appliances on sale in the store.

The penalty prompted Energy Safety to issue a reminder to wholesalers, retailers and consumers of the importance of energy efficiency labels.

Electrical appliances such as refrigerators, freezers, dishwashers, clothes dryers, washing machines and domestic air conditioners must display an energy efficiency star rating label when offered for sale or hire. Failure to comply with this requirement carries a maximum fine of \$20,000.

The energy efficiency label lets the buyer know how much electricity could be expected to be used during a year, and displays a number of stars to indicate the energy efficiency of the appliance.

This allows a potential buyer to compare the running costs of different brands and to then make an informed decision taking into account not just cost but energy efficiency.

The energy efficiency of an appliance is a very important consideration; energy efficient appliances help to reduce the production of greenhouse gases and also result in cost savings to the consumer.

Potential buyers are reminded to check that appliances display the stickers. Retailers are reminded to ensure energy efficiency labels are attached before offering appliances for sale.

Lost or stolen licences

As previously advised in Electrical Focus No. 27 (April 2003), an electrical or gas operative who has lost or had stolen his or her licence registration must apply for a replacement to avoid the risk of misuse of the existing registration number. The replacement licence will have a new registration number.

The following licences have been replaced due to being lost or stolen and are provided to assist employers and others in maintaining accurate registers and employing new staff.

Old	New	Grade	Issue Date	Expiry Date	Name
EW 133635	EW 143204	A	13/10/2003	31/07/2007	Paul Joseph GABLE
EW 135472	EW 143249	A	16/01/2003	16/01/2007	Clinton Troy CRAGAN
EW 132636	EW 143267	A	13/09/2000	13/09/2005	Jason William HARRISON
EW 136615	EW 142985	A	08/10/2002	08/10/2007	Novak MATHIS

PROSECUTIONS FOR BREACHES OF THE *ELECTRICITY (LICENSING) REGULATIONS 1991 AND ELECTRICITY ACT 1945* 1 August 2003 to 31 October 2003

Breach	Name (and suburb of residence at time of offence)	Licence No.	Fine & Court Cost (\$)
Carried out electrical work without holding an electrical workers licence Regulation 19(1) E(L)R	Peter Gee (Northampton)	EW 115048	1,947.50
Submitted a Notice of Completion in respect of electrical installing work that was not completed Regulation 52(3) E(L)R	North Shore Electrical Pty Ltd (Wangara)	EC 000339	777.70
Employed/instructed an unlicensed person to carry out electrical work Regulation 53(2) E(L)R	Kenneth Rawlings (Balingup)	NLH	1,057.70
Failed to immediately report a defect or unsafe electrical equipment at an electrical installation, to the owner/operator of the installation, relevant supply authority and to the Director Regulation 62(1) E(L)R	Brian Russ (Geraldton)	EW 103198	1,075.00
Failed to report an electrical accident Regulation 63 E(L)R	Brian Russ (Geraldton)	EW 103198	775.00
Exposed for sale/hire and/or advertised electrical apparatus or installation without being labeled (i.e. energy efficiency labeled) Regulation 33F EA	Hi-Fi Corporation (WA) Pty Ltd T/A Rick Hart Discounts (Osborne Park)	NLH	3,457.70*
Sold electrical apparatus without an approval from the Director Regulation 33B(2) EA	Challenge Home Furniture (Malaga & Whitford City Shopping Centre)	NLH	577.70*
	T & E Wang Pty Ltd T/A New Idea Furniture (Malaga)	NLH	6,387.50*

Legend: NLH No Licence Held
E(L)R Electricity (Licensing) Regulations 1991
EA Electricity Act 1945
* Global fine (more than one offence)

Note: There was one other prosecution finalized in this period. The detail of this prosecution is not included above as it resulted in a spent conviction order being issued.

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