

# ***ELECTRICAL INSPECTIONS***



**Winter 2010**

A.C.N. 000 049 276 A.B.N 31 000 049 276

OFFICIAL JOURNAL OF THE INSTITUTE OF ELECTRICAL INSPECTORS

RETURN ADDRESS: PO Box 411 Essendon North Vic 3041





**Editor: IEI Secretary**

**Postal address for the Journal:**

*The Editor: PO Box 411 Essendon North Vic 3041*

**Institute's Registered Office:**

C/- Page Kirk & Jennings 2nd Floor, Garland House  
52 Kings Park Rd West Perth WA 6005

**Postal Address for the Institute:**

Institute of Electrical Inspectors,  
PO Box 411 Essendon North Vic 3041

**Website**

[www.iei.org.au](http://www.iei.org.au)

**Email**

[Secretary@iei.org.au](mailto:Secretary@iei.org.au)

**Board of Directors - 2009/2010**

**Chairman:** John Macdonald (Vic)

**Deputy Chairman:** Darren Margerison (Vic)

**Financial Director:** Mark Aitken (Vic)

**Director:** Ken Wilkins (Vic)

**Director:** Rod Glindon (NSW)

**Secretary:** David Bibby (Vic)

**MOC coordinators:**

Graham Oliver (Vic)

The Institute of Electrical Inspectors or the Editor cannot accept responsibility for any product or service statements made herein, and the opinions and comments from contributors are not necessarily those of the Institute or the Editor. Contents of this Journal are copyright but may be reprinted with the permission of the Institute. Advertisers and/or advertising agencies upon and by lodging material with the publisher for publication or authorization or approving of the publication of any material, indemnify the publisher, its servants and agents against all liability, claims or proceedings whatsoever arising from the publication, and without limiting the generality of the foregoing to indemnify each of them in relation to defamation, slander of title, breach of copyright, infringement of trademarks or names of publication titles, unfair competition or trade violation of rights or privacy and warrant that the material complies with all relevant laws and regulations and that its publication will not give rise to any rights against or liabilities in the publisher, its servants or agents, and, that nothing therein is capable of being misleading or deceptive or otherwise in breach of Part V of the Trade Practices Act 1974.



## NOTICES

If members have issues in their state or know of information that is relevant to all members across Australia, please email the IEI Secretary so as this information can be added to the website immediately for all members to benefit from.

Any members who wish to include an Article or information relevant to all members in the next edition of the Journal, please email:

IEI Secretary: [secretary@iei.org.au](mailto:secretary@iei.org.au)

IEI Directors: [directors@iei.org.au](mailto:directors@iei.org.au)

(Yes, you can now contact all the IEI directors instantly via one email address)

Regards,

David Bibby  
IEI Secretary



## UNDERGROUND CABLES

During an Electrical Inspection recently at a large Multiple Domestic Development in Victoria, an IEI member was astonished to find that most of the Underground Mains Cables had not been installed correctly with regards to the Marker Tape that must be installed above the underground cables at 1/2 depth of the trench. Further to this, the IEI member proved to an REC that this was the case by showing the relevant clause from AS3000 to the REC.

Our IEI member was astonished even further when the REC asked when that rule was bought in.

The IEI implores all members to notify their clients at their earliest convenience regarding this very important safety aspect of underground wiring and suggests to IEI members to further enhance this clause of AS3000:2007, to suggest to their clients when running underground cabling to run the orange marker tape up above ground level at the cables ground exit points to prove the marker tape has been installed.

Examples of where the marker tape could be exposed:

- \* Against Temp in Perm Pole
- \* Against Underground supply Builders Poles
- \* Anywhere else that the Marker tape can be exposed beside ground exits of underground cabling

*AS3000:2007 Clause 3.11.4.5 - page 159*

### **3.11.4.5** Identification of underground wiring

Wiring systems installed underground shall be identified by an orange marker tape complying with AS/NZS 2648.1. In order to provide early detection of the presence of underground wiring during excavation work, marker tape shall be positioned at approximately 50% of the depth of cover above the wiring system or any additional mechanical protection provided for that system.

Where the wiring system is chased in rock, orange marker tape shall be laid directly on top of the wiring system before the concrete is poured.

*Exception: Where an underground wiring system is installed by means of boring, marker tape may be omitted, provided that the location of the wiring system is marked and recorded in a suitable permanent location that is readily available to any person involved with excavation work at the location of the wiring system. If a pipe is retained after boring operations, the use of an orange-coloured pipe or conduit is recommended.*

### **Standards Australia Representatives**

- EL001: Rodney Glindon (NSW)
- Peter O'Neill (Vic)
- EL036: Darren Margerison (Vic)
- HT-021: Darren Margerison (Vic)
- EL043 Derek Green (QLD)
- P-012: Fred Goetz (SA)
- EL001-11: Vacant
- EL001-12: Vacant

**Electrical Licensing & Registration Advisory Committee (ELRAC):** Ray Johnson (Vic)

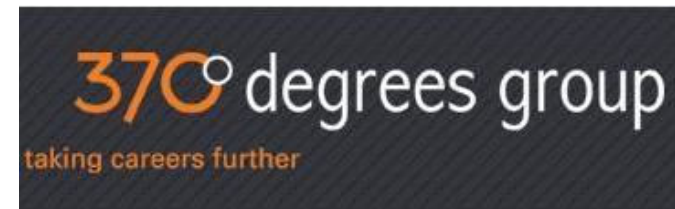
**Connection Magazine Contributor:**  
Vacant

### **Victorian Committees:**

- S.I.R**— Mark Aitken
- L.E.A**— Vacant
- L.E.I**— Peter O'Neill

**Sustainable and Emerging Energy Technology Consultative Committee:**  
Darren Margerison

### **IEI Supporters**





## MEMBER ALERTS

All state websites under the IEI ALERTS page now have a link to each states electricity regulator, any information posted on your regulators website will now appear on your states IEI page.

Please visit the IEI website for more information

[www.iei.org.au/alerts](http://www.iei.org.au/alerts)

### June 2010

AS/NZS 3012:2010 Electrical Installations - Construction & Demolition sites is now available

### June 2010

DR 3760 CP In-service safety inspection and testing of electrical equipment. COMBINED POSTAL BALLOT/AUSTRALIAN / NEW ZEALAND STANDARD FOR COMMENT  
Closing Date for comment - 9 July 2010

### May 2010

AS/NZS 60479.1 Effects of current on human beings and livestock - General Aspects is now available



## The AC-DC Segregation Question

A recent email to the AS3000 EL001 working committee posed the following question:

*Solar installations:*

*What are the required insulation requirements when installing the two pole DC and one pole AC isolator for a grid connect inverter in a common enclosure? Obviously a barrier would be ok but is it acceptable to simply rely on the single insulation on each of the conductors? Thus providing effective double insulation between active conductors or do each of the conductors need to be double insulated? Since both sources are at LV potential the separation requirements that apply to different voltage levels doesn't come into play.*

This question has become a contentious issue amongst members and installers of grid connected Inverter systems. Australian Standards working committees do not make rulings on issues such as this, however, EL001 committee responses are encouraging further discussion into this matter.

We invite members to submit opinions on this issue so as a definitive answer can be reached and a submission sent to the EL001 working committee.

*Question.*

*What should be the minimum segregation requirements of AC & DC cables that are housed in the same enclosure?*

Options for discussion:

- *Minimum distances apart*
- *Double insulation of all conductors*
- *Segregation by a physical barrier within the enclosure*
- *Other*

Please consider this issue and provide your comments to the Secretary.  
[secretary@iei.org.au](mailto:secretary@iei.org.au)

Any comments received will be published in the next issue of "Electrical Inspections"



## IEI External Committee Representatives

### Australian Standards Committees

The Institute currently has vacancies for members to sit on the following Australian Standards working committees:

**AS3001 EL001-11**

*Electrical installations - Transportable structures and vehicles including their site supplies*

**AS3002 EL001-12**

*Electrical installations - Shows and carnivals*

Here is your chance to become an integral part of shaping the next edition of an Australian Standard and help IEI members remain at the forefront of their profession by keeping members up to date with changes as they happen.

### Electrical Connection Magazine

The Institute received a request from the "Electrical Connection" Magazine recently to provide a member to fill the shoes of our previous contributor.

George Bosomworth contributed to "Electrical Connection" quarterly in his column "Ask George", so here is an opportunity for an IEI member to become as famous as George and have your own column in a National Electrical Industry Magazine.

Interested Members can contact the IEI Secretary for further information and application details.



**SUBSCRIBE NOW**



## COMMITTEE REPORTS

### AUSTRALIAN STANDARDS COMMITTEES

#### AS3000 EL001

EL-001 WIRING RULES IEI Rep - no meetings to date in 2010

EL-001-09 WIRING RULES W.G - no meetings to date in 2010

EL-001-21 AS/NZS 3017 (VERIFICATION) No meetings to date in 2010

EL-001-20 AS/NZS 3018 (DOMESTIC INSTALLATION ) One meeting held on 19/2/2010

The general conclusion was that 3018 should be expanded to include other issues such as energy efficiency, smart wiring etc. However, given the constraints imposed by the June 2010 deadline it would not be possible to expand the coverage in this edition. (It should be noted that a recent development is that NZ does not want it to be a joint Standard!!!! So any reference to NZ will have to be removed.

As Chairman of EL-20 & EL-21 (Health matters permitting) I intend to call a meeting mid June to resolve these issues.

*Regards Rod Glindon*

#### AS3000 EL001

Not much happening, no meetings have taken place in 2010, the following may be helpful,

AS 3018 Domestic installations is being revised as an Australia only standard. (Sub-committee chaired by Rod Glindon). Meeting next week should get the draft close to the comment stage.

AS/NZS 3010 Generating sets - proposal submitted to SA for support. Decision in August. This will be revised by a new sub-committee of EL-001 (probably Chaired by Roger Sharp).

EL-041 is drafting a new standard (AS/NZS 5110) called Recessed Luminaire Barriers - should be available for Public Comment in a few weeks. I am collecting information of the changes required for AS/NZS 3000 Amendment #2 but timing on this is uncertain at the moment. Best guess might be early 2011

*Regards Peter O'Neill*

## AUSTRALIAN STANDARDS COMMITTEES

### AS2067 - EL043

The EL 043 committee has not informed of any committee meetings this half of the year so I have no information to report.

*Regards, Derek Green*

### AS4761 - P-012

The P012 committee has not held any meetings since I have been admitted on the 21<sup>st</sup> of April this year.

If and when things change I will keep you posted.

*Regards, Fred Goetz*

### AS3760 EL036

A meeting was held on 30 & 31 March 2010 to discuss the post-public comment for the revision of AS/NZS 3760, AS/NZS 5761 and AS/NZS 5762.

The meeting worked through all the comments and it was agreed that the decisions made largely for AS/NZS 3760 would be collated and put up to a vote and public comment is sought for two unresolved items. These items are: Maximum leakage current in Table 1 and Minimum insulation resistance in Table 2 for Class I and II equipment do not align. Comment is requested on whether leakage current value for Class I should be reduced to 1 mA or minimum insulation resistance value for Class II should be increased to 2 MΩ.

Table 4, there is now no difference in the intervals between inspections and tests of Class I equipment, Class II equipment, or cord sets, cord extension sets, and EPODs. Other significant changes include the intervals between inspection and tests of Class II (double insulated) for factories, workshops, and equipment used for commercial cleaning reduced to every 6 months from every year. Also the push-button test for portable appliances used in commercial cleaning has changed from every 3 months to daily or before every use, whichever is the longer.

The document as made available on the Standards New Zealand website from 15 June 2010 and comment is needed to be received no later than 9 July 2010. The other standards AS/NZS 5761 and AS/NZS 5762 have been placed under the care and direction of the New Zealand members as the issues that have been raised all relate to New Zealand regulatory framework.

*Regards, Darren Margerison*

Accommodation. [www.shoppingtownhotel.com.au](http://www.shoppingtownhotel.com.au)

Note: Accommodation to be organised by each AGM attendee if required.

## Accommodation at the Shoppingtown Hotel

### Rooms

Hotel Shoppingtown offers budget accommodation throughout the year. Coffee and tea making facilities, free to air TV and a small fridge are in each room.

There are 8 standard rooms available, each with a double bed and a single bed.

There are two family rooms. One has a double and 2 single beds in the one room. The large family room has a double bed, 4 single beds in 2 separate rooms and 2 bathrooms.



### Guest Room Features

- Continental breakfast delivered to your room
- Free to air TV
- Bar fridge
- Tea/Coffee making facilities
- Iron/Ironing Board

### Important Information

- Continental breakfast is included in the room rate.
- Check Out is 10 am. If later than 11 am an extra full price days fee will be charged.
- Phone calls are automatically charged to rooms and need to be paid on departure.
- A form of photo identification and a credit card must be presented at time of check in.
- Full payment is required at check in.

### Reservations and enquiries

 Please contact reception

### Standard room rates

Sunday - Thursday	Single	\$89
	Double	\$89
	Weekly Rate	\$455 Plus \$15 per extra Person
Friday & Saturday	Single	\$95
	Double	\$95
	Plus \$15 per extra Person	

### Family room rates

Normal	\$165
Weekly rate	\$1000

*Prices include GST and are subject to change without notification, so please confirm when making your reservation*



## ANNUAL GENERAL MEETING 2010

### ITINERARY

#### Saturday 16th October 2010

Annual General Meeting 10:00am – 4:00pm  
Lunch 12.30pm

Venue: Skyline Function Room, Shoppingtown Hotel

Ladies: Retail Therapy at Doncaster Shoppingtown

#### Saturday 16th October 2010

IEI AGM Dinner 6.30pm

Venue: Shoppingtown Hotel bistro

The IEI Agenda, Proxy form, Nomination form and Acceptance form for this years AGM are all available on the website at:

[www.iei.org.au/meetings](http://www.iei.org.au/meetings)

Please advise the IEI office if you require a copy to be sent by regular Post.

Phone: **03 9879 0442**

Friday evening cocktails and Sunday day trip are no longer organised by the IEI, however, if members wish to organise these functions for the benefit of Attendees, please notify the Secretary of the details of these functions and we will place the details on the website.



## AUSTRALIAN STANDARDS COMMITTEES

### AS3003 HT-021

A meeting was held at the end of May 2010 however as notice provided was less than two weeks notice I was not able to attend. There was a revision of AS/ NZS 3003 that was discussed as the closing period for comments was 12 May 2010.

*Regards, Darren Margerison*

AS3001 EL001-11: Vacant  
AS3002 EL001-12: Vacant

*Note: The Board of Directors are currently pursuing a suitable candidate for the above vacancies, if you wish to apply to become the IEI representative of any of the above committees, contact the IEI Secretary for further information.*

## VICTORIAN COMMITTEES

### Service & Installation Rules (SIR)

- \* Monthly Meetings for the last year, recently increased to Bi-monthly meetings.
- \* The current 2005 Edition of the S.I. Rules will experience some major additions and alterations.
- \* Draft expected in the later half of 2010
- \* External factors driving some changes include Advanced Metering I Infrastructure, ESV Installation Regulations., Embedded Networks and Alternate Sources of Supply.
- \* Sub-Committees have been working on these topics.
- \* Distribution Companies are facing many and varied requests from the Electrical Industry, which will flow to the associated Electrical Inspectors.

IEI Members are encouraged to attend the upcoming Information Sessions.

*Regards, Mark Aitken*



## COMMITTEE REPORTS

### VICTORIAN COMMITTEES

#### Electrical Licensing & Registration Advisory Committee (ELRAC):

We have not had an ELRAC meeting this year so no report available.

*Regards, Ray Johnson*

#### Licensed Electrical Assessment Steering Committee (L.E.A)

No meetings have been attended as nomination to this committee is currently under review.

*Regards, David Bibby (IEI Secretary)*

#### Licensed Electrical Inspector Steering Committee (L.E.I)

Meetings for this committee have yet to be scheduled for 2010.

*Regards, David Bibby (IEI Secretary) on behalf of Peter O'Neill*

#### Sustainable and Emerging Energy Technology Consultative Committee:

This is a new committee that had the inaugural meeting on 16 June 2010 and the purpose of the committee is to provide Energy Safe Victoria (ESV) with information and knowledge on industry trends and developments and to provide guidance and advice on training and the regulatory arrangements that will ensure the safe installation, operation and maintenance of new and emerging technologies.

The meeting discussed the results of the solar installation audits and is now seeking further information from the representatives to ensure that the installations are compliant and safe as we move forward with the increase in these installations.

There will also be focus on new technologies such as electric vehicles and their interface with the electrical distribution system and other forms of alternative power.

*Regards, Darren Margerison*



## Exposed Metal Extra Insulation

At the April Members meeting in Victoria, the installation of extra insulation to protect cables near or in contact with exposed metal was discussed with representatives from Energy Safe Victoria.

A copy of the question and response is reproduced below for your information

*Regulation 212 – Bonding of support for low voltage overhead service.*

*Please advise as to the progress of this regulation.*

*ESV Response-*

*Neutral bonding now off the table, comments are being sought regarding earthing of metal fascia's and brackets by the REC with a conductor the same size as the main earth and providing additional protection to mains where they enter the bracket and exit the bracket by flexible conduit .*

*Any submissions need to be agreed by May to allow for changes to occur in June*

*Proposals:*

- (a) from 1<sup>st</sup> July raiser brackets and fascias earthed with conductor sized to mains (6 month moratorium).*
- (b) From 1<sup>st</sup> July all raiser brackets to be internally lined with HD flexible conduit protruding 300mm past end . (12 month moratorium).*

*ESV wants feedback from IEI.*

The IEI submitted a response regarding this issue in early May this year, and is yet to receive a reply from Energy Safe Victoria with respect to our submission.

Research regarding the extra insulation of conductors is complete and a document has been produced explaining the different configurations that may be applied when installing new consumers mains cables near or in contact with exposed metal. Follow the link below to download the document.

[www.iei.org.au/alerts/victoria](http://www.iei.org.au/alerts/victoria)

Any further updates provided by ESV will be sent to all members as soon as they are received,

Members are encouraged to print and carry the document with them to alert their clients to this practice if ESV deem this requirement mandatory as of 1 July 2010.